

BURNHAM[®]

Commercial Boilers



**Commercial Cast Iron Boilers
& Commercial Stainless Steel
Condensing Boilers**

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APEX™ Series

Stainless Steel, Condensing, Gas Fired Commercial Boiler



- **95% Thermal Efficiency**
- **Equipped with ABC 2.1 Control System**
 - Multiple Boiler Lead/Lag for up to 8 Boilers
 - Multi-color LCD Touchscreen Display
 - Intuitive Text-based Menus
 - Includes Outdoor Reset
- **Commercial Stainless Steel Heat Exchanger**
- **Multiple Venting Options**
- **Low NOx**
- **Negative Pressure Cabinet**
- **5:1 Modulation**



Apex Boiler Features



High Performance Commercial Hydronic and Radiant Heating

Introducing the Apex from Burnham Commercial, a condensing boiler with thermal efficiency ratings of 95%. The Apex utilizes a stainless steel heat exchanger, designed to extract maximum heat from the combustion process, along with the Apex Boiler Control System which is designed to enhance boiler & system efficiency and provide easy installation and servicing. These intelligent features are wrapped in a sleek, modern appliance-like jacket, which makes the Apex both attractive and smart.

Stainless Steel Heat Exchanger

The heart of the Apex boiler is the ASME-certified stainless steel heat exchanger. Each heat exchanger is factory hydro-tested to insure quality and reliability.



The Apex Boiler Control System

The Apex Boiler Control System (ABC System) has many features which maximize the efficiency and comfort of a heating system, while providing unmatched ease of use (for a full description of these features, please see pages 4-5)

- Full color backlit touchscreen display
- Intuitive menus which provide data in simple text, not in cryptic codes
- Capable of linking up to eight boilers and three pumps simultaneously
- Control data logging
- Outdoor reset and warm weather shutdown
- Domestic hot water priority
- Full modulation with 5-to-1 turndown and adaptable firing rate output
- Built in provision for off-season pump exercising
- Plug & play connections
- Multiple & adjustable pump outputs
- Night setback & unoccupied modes
- 4-20mA and modbus inputs



Single Point Power

Boiler pump and DHW pump are powered directly from the Apex

Sealed Combustion with Negative Cabinet Pressure

Lower portion of the boiler cabinet operates under a negative pressure, creating an additional layer of safety

Simple Connections

All gas, water, and electrical connections are made from the left side of the boiler

Condensate Protection

Unique polypropylene condensate trap (patented) stands up to acidic condensate, and features an integral float switch which protects the heat exchanger from condensate back-up

Sealed Top Panel

The sealed top panel protects boiler controls from spills or leaks; the components are also isolated from the lower jacket to protect them from cold or moist combustion air

Smart Controls

ABC 2.1 control system offers multiple boiler lead/lag for up to 8 boilers, multicolor LCD touchscreen display, intuitive text-based menus, and outdoor reset

Efficient Combustion

Air and fuel are pre-mixed in the blower assembly for clean, balanced combustion, longer component life, and protection of mechanical fan components

Design Simplicity

Separate spark rod and flame sensor are used for longevity and reliability

Durable, efficient stainless steel heat exchanger

Maximizes heat transfer



Apex Boiler Control... Features Beyond Compare.

The Apex Boiler Control System is the next generation of advanced electronic controls designed specifically for condensing boilers. The ABC System was designed with many features that make the control simple to understand and use, as well as features that optimize boiler performance, flexibility and overall system efficiency and reliability. The ABC System is simply the most powerful, versatile, and user-friendly boiler control available.

Touch Screen LCD Display

- Simple setup! Requires only four inputs (boiler minimum and maximum water temperatures and outdoor air minimum and maximum temperatures)
- Boiler status, settings, and diagnostic information are all accessible from the display in simple English text.
- Control settings can be adjusted from the display, advanced settings are password protected.
- Built-in diagnostics allow simple trouble-shooting.
- No external laptop computer required for setup or adjustments, both can be accomplished via the LCD display.
- Display turns red in the event of error or blackout. Blinking buttons guide the user through diagnostic screens that explain the issue and how to resolve or repair the issue. Help screens are provided, offering detailed explanations of each setting in simple terms that are easy to understand.

Control Data Logging

- Can display and recall information from numerous control parameters.
- Previous five (5) lock-out events can be recalled on the display. Real time trending tracks the following four parameters: Supply Temperature, Return Temperature, Flame Signal, and Boiler Firing Rate in a running graphic display.
- Logs runtime hours for the boiler as well as the number of cycles for the boiler, the boiler pump, the DHW pump, and the system pump. This information can assist in diagnosing both boiler and system issues, saving valuable time on service calls.

Outdoor Reset

- Adjusts boiler temperature based on the outdoor temperature.
- Helps to keep the boiler in condensing mode longer, resulting in higher efficiency.
- Improves comfort by reducing overheating of the zones.
- Easily adjustable, using simple parameters (outdoor high and low temperatures, and boiler high and low temperatures).

Domestic Priority with Priority Protection

- Directs boiler output to the indirect water heater in order to minimize recovery time.
- Priority Protection is provided to allow the boiler to continue heating the building in the event of excessive domestic hot water demand.

Control Flexibility

- Responds to multiple heating demands, and features adjustable pump outputs, allowing for greater installation and piping flexibility.
- Pump outputs can be selected and adjusted for the boiler, the system, and the domestic hot water pumps.

Adaptable Firing Rate Output

- Allows the boiler's output to be adjusted for varying heat loads connected to the system.
- Reduces boiler cycling, wear and tear on parts, and enhances heating efficiency and comfort.

Multiple Firing Rate Sensor Options

- Accommodates piping arrangements that are better suited to select the firing rate of the boiler based on the header temperature, rather than the boiler supply temperature.
- Enhances the versatility of the Apex boiler by integrating into existing systems without requiring additional controls.

Warm Weather Shutdown

- Ideal for commercial installations that maintain heating loop temperatures year round.
- Can be adjusted to allow the heating loop to cool when the outdoor temperature reaches a specified temperature.
- Reduces unnecessary boiler/pump cycling and standby losses, but will still respond to DHW demands.

Freeze Protection

- If possible freezing water temperatures are detected, the ABC System will operate all pumps connected to the boiler. If water temperatures continue to drop, the boiler will fire and warm the system slightly in order to prevent freezing and damage to the system.

Pump Exercise

- Circulators connected to the ABC System control that don't operate for seven (7) days, are activated to run for ten (10) seconds.
- Reduces the possibility for pumps to seize and fail due to long periods of inactivity, improving the overall reliability of the heating system.



Staging and Modulation

- The ABC can be connected to external staging controls via a 4-20 mA and heat demand contact.
- External controls can modulate the boiler's firing rate in order to satisfy overall system demand.
- No external relays or adapters are required.

Energy Management System (EMS) Compatible

- Can be connected to a building's energy management system (EMS) using simple menu selections and wiring a 4-20 mA input.
- Connects to EMS using modbus protocol
- Allows EMS controls to adjust either the ABC central heating setpoint or the firing rate which allows it to be compatible with EMS controls that develop energy efficient setpoints based on outside air temperature, solar loading, and actual room air temperatures.

"Night Setback" and "Unoccupied" Control Modes

- EnviraCom™ enabled, allows the boiler to communicate directly with Honeywell EnviraCom™ thermostats.
- Allows the boiler to further enhance system efficiency by reducing the water temperature during "sleep" and "away" modes.

Reliability

- Built-in brown-out protection, with no additional devices such as "brown out relays" required.
- Internal fuse protection for pump outputs is NOT REQUIRED. The control is capable of handling up to 15 amps, and does not require additional relays to switch power to the circulators in most installations.

Ease of Connectivity...



Cat 5 Connections

- Enables easy connections between boilers or between boiler and building management system
- Utilizes ordinary RJ-45 (Cat 5 Ethernet) cord



Line Voltage Terminal Strip

- 120V AC power, pump outputs
- Strip slides out & hooks to boiler for easy access



Low Voltage Terminal Strip

- Adds additional inputs for header and DHW sensors

The Lower Cost, Higher Efficiency Alternative to Single Commercial Boilers

Modular/Multiple Boiler Concept

Modular/multiple boiler systems, such as the Apex put the efficiency, cost, and service advantages of compact gas boilers to work in heating applications where a single commercial boiler would not be sufficient. The systems connect any number of compact, self-contained gas boilers together and step-fire them to efficiently meet heating loads on demand.

Firing to Load Demand Minimizes Standby Losses

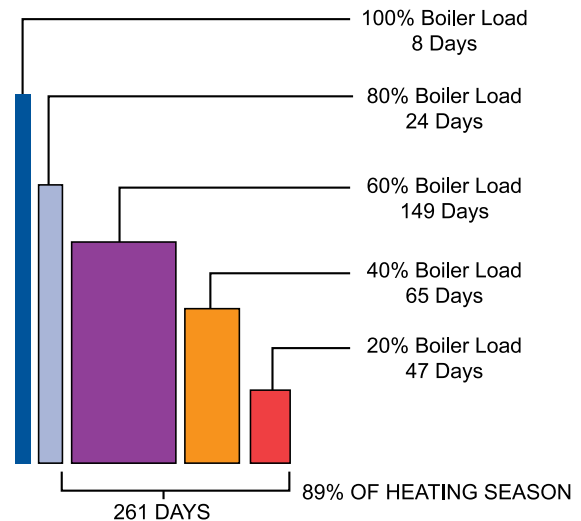
Maximum fuel utilization is achieved during long periods of full firing at the design temperature for each boiler. In comparison, a single large boiler would cycle on and off, more frequently during partial loads, not reaching its rated efficiency. During 90% of the average heating season less than 65% of the total heating capacity is required. Step-firing activates only those boilers needed to meet the load demand which reduces cycling and increases annual fuel efficiency.

Features & Benefits of Apex Boilers in Modular/Multiple Boiler Installations

Choosing a modular or multiple boiler system can have many benefits over a single boiler installation.

- **Cost Savings**
The basic cost of a modular/multiple system is typically less than that of a single large boiler of equal capacity in most applications.
- **Compact Design**
Lighter weight boilers like the Apex are suitable for installation on any floor, from basement to penthouse. A floor shield is required when installed on a combustible floor. The Apex is also designed with a stackable cabinet, so multiple boiler installations can be accommodated in tight spaces.
 - Apex boilers are readily portable, and can be brought through standard doorways using a common hand truck.
 - Boilers can be installed during any phase of construction.
 - Apex boilers can be interconnected via a common RJ45 ethernet cable (or by alternate three wire connection),

HOT WATER BOILER SIZING
SEASONAL BOILER LOAD DEMAND



Program Outdoor Air Reset Curve with only four points:

- Minimum boiler water temperature
- Maximum boiler water temperature
- Minimum outdoor air temperature
- Maximum outdoor air temperature

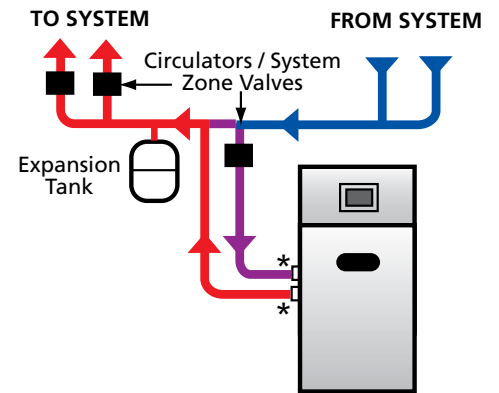
- **Base Loading**
The practice of replacing larger boilers with multiple, smaller modular units can offer numerous benefits such as greatly increased efficiencies with reduced standby losses, cycling and emissions.
- **Redundancy**
Increases the dependability of the boiler system by sharing the heating load between several boilers rather than having a single boiler responsible for heating the entire system.
- **Flexibility of Venting Options**
The ability to vent by using PVC material provides multiple venting options and enables a greater level of choice concerning the layout of a boiler room. Apex boilers can be vented horizontally with a sidewall penetration, or vertically. In addition to PVC, the Apex can be vented with concentric polypropylene, or with AL29-4C stainless steel piping.

System Piping

The Apex is designed to be installed in a variety of configurations. Shown here are four illustrated examples of how the Apex boiler can be piped into new or existing heating systems. Examples shown here include heat-only applications, building heat plus domestic hot water, alternate piping of heat plus domestic hot water, and a multiple boiler installation incorporating domestic hot water. The Apex provides outstanding flexibility by providing the capability of controlling up to three system pumps. In addition, an indirect water heater can be placed in either the primary or secondary loop, further enhancing the boiler's ability to accommodate a variety of systems.

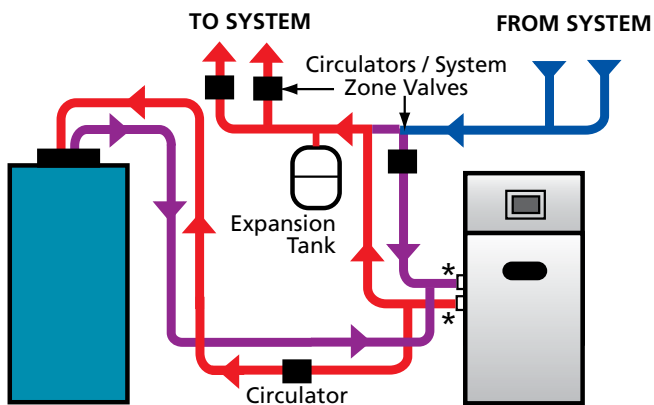
These illustrations are intended for informational purposes only, and are not intended for use as near boiler piping diagrams.

For further information on piping requirements, please see the Apex Installation & Operations Manual.



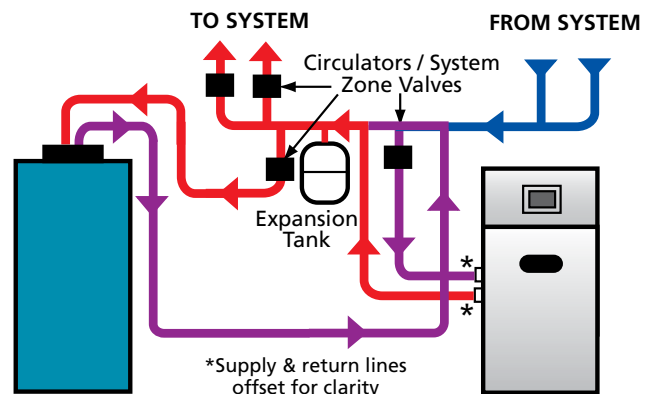
*Supply & return lines offset for clarity

HEAT-ONLY APPLICATION



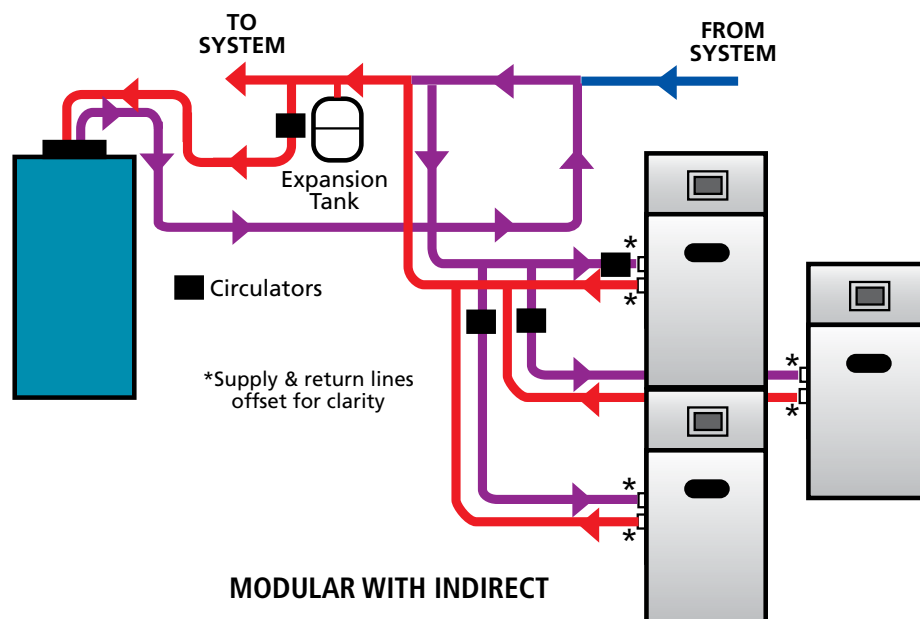
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HEAT PLUS INDIRECT



*Supply & return lines offset for clarity

HEAT PLUS INDIRECT (ALTERNATE)



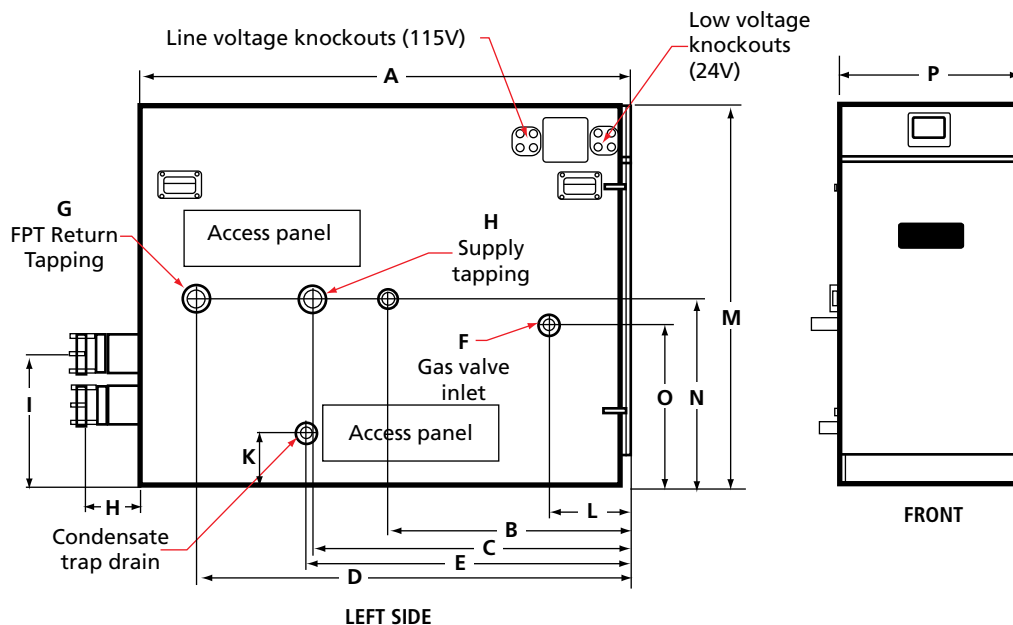
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MODULAR WITH INDIRECT

Dimensions and Specifications

Dimensions

Model	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P
APX399	28-7/8"	6-13/16"	13-11/16"	23-3/4"	15-13/16"	3/4"	1-1/2"	1-1/2"	12-1/4"	5"	8-5/16"	43-7/16"	17-5/16"	32-7/16"	16-11/16"
APX500	44-7/8"	22-1/8"	29"	39-11/16"	29-3/8"	3/4"	1-1/2"	1-1/2"	12-1/4"	5"	7-7/16"	35"	17-5/16"	14-29/32"	16-11/16"
APX800	54-9/10"	28-3/8"	34-1/4"	48-1/16"	33-3/16"	1"	2"	2"	12-1/4"	5"	7-1/2"	35"	17-1/4"	7-1/4"	16-11/16"



Specifications & Ratings



MODEL	RATINGS			I=B=R NET RATING WATER (MBH)	THERMAL EFFICIENCY	GAS CONNECTION	WATER CONTENT (Gal.)	APPROX. SHIPPING WEIGHT (Lbs.)	HEAT TRFR. AREA (SQ. FT.)	INTAKE & VENT DIA.	SUPPLY & RETURN CONNECTIONS
	MIN. INPUT (MBH)	MAX. INPUT (MBH)	GROSS OUTPUT (MBH)								
APX399	80	399	377	328	95%	3/4" NPT	3.4	304	41.8	4"	1-1/2" NPT
APX500	100	500	475	413	95%	3/4" NPT	4.2	375	50.8	4"	1-1/2" NPT
APX800	160	800	760	661	95%	1" NPT	5.0	430	65.3	6"	2" NPT

Standard Equipment

Apex Boiler Control System	Natural Gas Only	Simple Layout & Wiring	Built-In Lifting Handles
Accepts 20mA for External Staging	Compact, Service Friendly Design	Low Voltage Terminal Strip	100' Equiv. Ft. Lengths for Combination Air & Vent Pipes
Built-in Outdoor Reset & Domestic Priority	50 PSI Relief Valve (399/500)	Negative Pressure Lower Cabinet	
Built-in Diagnostics	60 PSI Relief Valve (800)	Sealed Control Compartment	
Touchscreen Display	80 PSI and 100 PSI are optional on all models	Slide-Out Control Panel	

Optional Equipment

Description	Part #
Condensate Neutralizer Kit	101876-01
80# Relief Valve Kit	102207-01
100# Relief Valve Kit	102212-01
Tekmar 265 3-Boiler Modulating Control	6016088

CSD-1 Equipment

Description	Part #
High and Low Gas Pressure Switch Kit	102772-01
Hydrolevel 550 M.R. LWCO w/ Test Button	80160641
M&M 750P-M.R. LWCO w/ Test Button	80160718
Honeywell L4006E Manual Reset High Limit	80160703



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Series 8H

Cast Iron Gas Fired Commercial Water Boiler



- 252 to 550 MBH Input
- Over 83% Efficient
- 30 or 50 PSI
- Cast Iron Sectional Design
- Atmospheric Vent
- Modular/Multiple Boiler Configurations Available



Series 8H

Efficient Cast Iron Commercial Water Boiler

High Performance & Long Term Reliability

Burnham Commercial's promise to deliver the best continues with the Series 8H. The features and efficiency of the 8H boiler make it ideal for single and multiple boiler applications. Offering space heating, or a combination of heating and domestic hot water, the Series 8H has a compact design which easily adapts to existing piping arrangements, boiler room requirements, and system heating needs.

American-Made Cast Iron Construction—BC25-HSi

Burnham Commercial's unique BC25-HSi cast iron formula has an extremely high silicon content, making it stronger and more flexible. It offers better thermal shock resistance and greater heat transfer capabilities than other cast iron products. BC25-HSi's properties allow Burnham Commercial to maintain the highest level of quality from start to finish, and provide a product that is optimized for hydronic heating applications.



- **Manufactured with Quality**

All cast iron sections for Burnham Commercial boilers are manufactured at Burnham Foundry, LLC in Zanesville, Ohio, ensuring quality and availability of boiler sections.



- **Cast Iron Nipple Difference**

The gaskets that other manufacturers use to connect boiler sections can break down if they come in contact with oils, boiler flue gases, corrosion inhibitors, pump lubricants, and antifreeze. Burnham Commercial is committed to safety, reliability and durability. That's why the Series 8H uses cast iron nipples instead of gaskets in this critical area. The Series 8H's cast iron nipples remain unaffected by those elements, ensuring long life and eliminating costly repairs. These vital components are precision cut and will last the life of the boiler. They expand and contract with the sections they connect, ensuring the overall integrity of the section assembly.



83% Efficiency

With today's high energy costs, the need for efficiency has never been greater. The Series 8H has been designed to offer high efficiency without sacrificing long term reliability.

- **Heat Exchanger Design**

The cast iron heat exchanger on the Series 8H features a pinned heating surface. These multi-faceted pins allow the heat generated from the combustion process to be transferred to the cast iron from a number of angles, which contributes to the boiler's overall efficiency. A vertical flue design extracts heat while maintaining low draft losses.



- **Deluxe Insulated Jacket**

The jacket on the Series 8H is lined with three inches of insulation. This serves to reduce jacket and standby heat losses, further conserving energy. The jacket itself is powder coated, insuring a scratch resistant, long lasting finish.



Two Packaging Options

Knocked-down 8H units are easy to handle and maneuver at the job site. Optional containerized skid (shown) can be stacked, providing warehousing and job site convenience. Packaged and wired units provide fast and easy installation. A reinforced shipping container protects against damage.



Can be configured for modular or multiple boiler operation!

See page 14 for details



Safety Relief Valve

50 PSI (standard)
30 PSI (optional)

Top Mounted Drafthood

Blocked Vent Switch

Automatically shuts down boiler in the event that the chimney or venting system become restricted.

Pressure/Temperature Gauge

Rugged Cast Iron Nipples

Assembled with cast iron nipples for durability and reliability

High Limit Control Manual Reset

Honeywell L4006E (Packaged only)

High Limit Control

Honeywell L4080D

Durable Cast Iron Sections

For long term durability and reliability

Ignition Module

Honeywell S8610

50 VA Transformer

Deluxe Jacket with 3" Insulation

Decreases operating losses and gives a lasting finish

Aluminized Steel Burners

Provide optimized air flow for maximum efficiency, smooth ignition and long life.

Gas Manifold

With plugged pressure tapping, saves on installation time and money.

Step Opening Gas Valve

Provides smooth ignition

Flame Rollout Switch

Safely shuts down the boiler if the flue passages become blocked or restricted.

Commitment to Quality

Burnham Commercial, "America's Boiler Company," has earned a reputation for quality and dependability. For single or multiple boiler applications, the Series 8H is right for your next job.

The Lower Cost, Higher Efficiency Alternative to Single Commercial Boilers

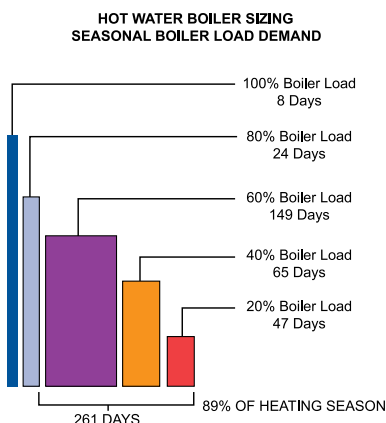
Modular/Multiple Boiler Concept

Modular/multiple boiler systems put the efficiency, cost, and service advantages of compact gas boilers to work in heating applications where a single commercial boiler would not be sufficient. The systems connect any number of compact, self-contained gas boilers together and step-fire them to efficiently meet heating loads on demand.

Firing to Load Demand Minimizes Standby Losses

Maximum fuel utilization is achieved during long periods of full firing at the design temperature for each boiler. In comparison, a single large boiler would cycle on and off, more frequently during partial loads, not reaching its rated efficiency.

During 90% of the average heating season less than 65% of the total heating capacity is required. Step-firing activates only those boilers needed to meet the load demand which reduces cycling and increases annual fuel efficiency.



Features & Benefits

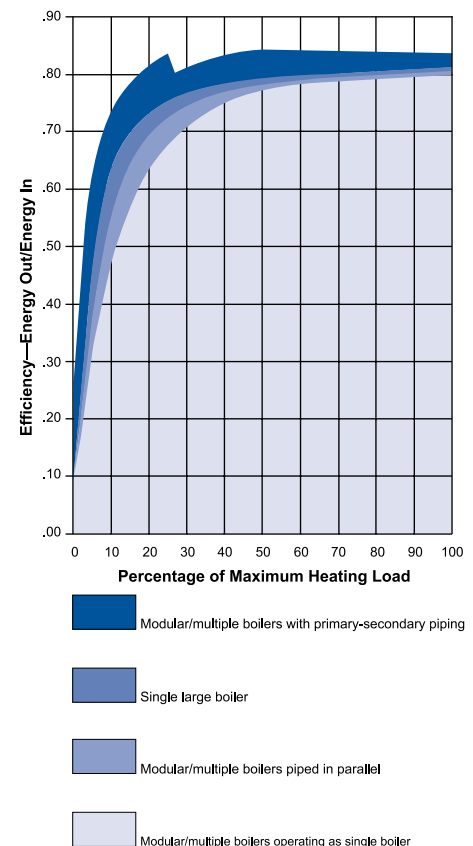
Choosing a modular or multiple boiler system can have many benefits.

- **Cost Savings**
The basic cost of a modular/multiple system is less than that of a single large boiler of equal capacity in most applications.
- **Compact Design**
Lighter weight boilers are suitable for installation on any floor from basement to penthouse. A floor shield is required when installed on a combustible floor.
 - Hand truck the boilers through standard doorways.
 - Install the boiler during any phase of construction.
- **Two Packaging Options**
Packaged and pre-wired for quick and simple installation or knock down with sections assembled, for easy movement into the boiler room.
- Controls are simple to set-up, operate and service.
- Standby safety—service one boiler while the others carry the load.
- Provision for expansion.

Spec the Right Piping to Preserve Efficiency

Burnham Commercial recommends primary-secondary piping to maximize energy efficiency. Primary-secondary piping reduces off-cycle heat loss by delivering a positive balanced water flow only through each fired or cycling boiler. It also requires only a single header and less piping, which reduces installation cost and time.

Testing conducted by the National Bureau of Standards verifies that the efficiency of boilers piped primary/secondary surpasses that of boilers piped in parallel, and single large gas boilers—by up to 10%. Prefabricated water manifolds with flex-couplings are available from Burnham Commercial for either 2 or 3 module installations. Prefabricated manifolds can be used for primary-secondary or parallel piping arrangements.





Modular or Multiple?

ASME Section IV differentiates between a modular and multiple boiler installation. According to ASME, a modular boiler system consists of individual modules with a maximum input of 400 MBH each. Each module is to be equipped with a pressure temperature gauge, temperature limit control, safety relief valve, and drain valve. The modules are to be manifolded together on site without any intervening stop valves. The modular boiler assembly is to be equipped with a common temperature limit control, low water cutoff, makeup water connection, provision for thermal expansion, and supply and return stop valves.

Multiple boiler installations require a stop valve in the supply and return pipe connection of each boiler. Each boiler needs to be equipped with a pressure temperature gauge, two temperature limit controls, safety relief valve, and drain valve. Boilers over 400 MBH must also include a low water cutoff. Sizes 805, 6, and 7 can be installed as modular or multiple boilers. Sizes 808, 9, and 10 are to be installed as multiple boilers. In both cases, minimum recommended side-to-side clearance is one inch or as required by local codes.

Modular/Multiple Boiler Controls

Available Controls

Burnham Commercial offers a selection of system control packages to let you design modular/multiple boiler installations based on heat use, fuel economy, and the desired level of automation. For more information on the controls shown or for more information on controls not shown here, contact Burnham Commercial.

Enjoy the peace of mind that comes with modular and multiple boilers. Multiple boilers can continue to heat the building even while one is being serviced, and you won't have to worry about lost efficiency due to short cycling during shoulder months.



Description	tekmar 261	tekmar 263	tekmar 264	tekmar 265	tekmar 268
Staging	Up to two on/off or one low-high-low boiler	Up to two on/off or one modulating boiler	Up to four on/off or one modulating boiler	Up to three modulating boilers	Up to nine on/off or four low-high-low boilers
Number of stages	2	2	4	3	9
Boiler differential	A/M	A/M	A/M	A/M	A/M
Minimum supply temp.	M	M	M	M	M
Outdoor reset	S	S	S	S	S
Boiler post purge	F	A/M	A/M	A/M	A/M
Equal run time rotation	S	S	S	S	S
PID staging	S	S	S	S	S
W.W.S.D.	S	S	S	S	S
D.H.W.P.	—	S	S	S	S
Pump exercising	S	S	S	S	S
Water temp setback	S	S	S	S	S
Zone temp. setback	—	—	—	—	—
120/240V relay outputs	S	S	S	S	S
CSA/C US approved	S	S	S	S	S
Auto test	S	S	S	S	S
Error message	S	S	S	S	S
Modulation					
0-20 mA or 4-20 mA outputs	—	S	—	S	—
Min/max modulation settings	—	S	—	S	—
Parallel/sequential modulation	—	—	—	S	—

KEY: A/M = Auto/Manual; S = Standard; F = Fixed; M = Manual

Number of Boiler Sizes Required						Ratings - (MBH)		Net Output	Approx. Shipping Weight Lbs.
805H	806H	807H	808H	809H	810H	Input	Gross Output		
2 1	1 2 1	1 2 1	1 2 1	1 2 1	1 2	504 567 630 689 748 807 866 924 982 1041 1100	420 472 524 573 622 671 720 769 818 868 918	368 412 456 498 540 583 626 669 712 755 798	1220 1310 1400 1491 1582 1672 1762 1858 1954 2045 2136
		2 1	1 2 3 2 1	1 2 3 2 1	1 2 3	1181 1240 1299 1357 1415 1473 1532 1591 1650	982 1031 1080 1129 1178 1227 1277 1327 1377	853 896 939 982 1025 1068 1111 1154 1197	2463 2553 2643 2739 2835 2931 3022 3113 3204
			4 3 2 1	1 2 3 4 3 2 1	1 2 3 4	1732 1790 1848 1906 1964 2023 2082 2141 2200	1440 1489 1538 1587 1636 1686 1736 1786 1836	1252 1295 1338 1381 1424 1467 1510 1553 1596	3524 3620 3716 3812 3908 3999 4090 4181 4272
			3 2 1	2 3 4 5 4 3 2 1	1 2 3 4 5	2281 2339 2397 2455 2514 2573 2632 2691 2750	1898 1947 1996 2045 2095 2145 2195 2245 2295	1651 1694 1737 1780 1823 1866 1909 1952 1995	4597 4693 4789 4885 4976 5067 5158 5249 5340
			2 1	4 5 6 5 4 3 2 1	1 2 3 4 5 6	2830 2888 2946 3005 3064 3123 3182 3241 3300	2356 2405 2454 2504 2554 2604 2654 2704 2754	2050 2093 2136 2179 2222 2265 2308 2351 2394	5670 5766 5862 5953 6044 6135 6226 6317 6408
			1	6 7 6 5 4 3 2 1	1 2 3 4 5 6 7	3379 3437 3496 3555 3614 3673 3732 3791 3850	2814 2863 2913 2963 3013 3063 3113 3163 3213	2449 2492 2535 2578 2621 2664 2707 2750 2793	6743 6839 6930 7021 7112 7203 7294 7385 7476
				8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8	3928 3987 4046 4105 4164 4223 4282 4341 4400	3272 3322 3372 3422 3472 3522 3572 3622 3672	2848 2891 2934 2977 3020 3063 3106 3149 3192	7816 7907 7998 8089 8180 8271 8362 8453 8544

Not for direct Installation on combustible flooring. A heat shield is required and available for combustible floor installations.
Not for installation on carpet, even with floor shield.

Optional Equipment



Water Manifolds

Factory fabricated manifolds are available as a convenience to the installer. The manifolds are lightweight and forgiving of minor piping misalignments common to multiple boiler installations. Available as two-module or three-module manifolds. For installations of four or more modules in a row, the manifolds can be joined together as required. Applicable to primary-secondary or parallel piping arrangements.



Flex Couplings

Easy to install flex couplings are available to facilitate piping connections. They accommodate misalignments between pipes and permit up to a total of 8° angular misalignment at each connection while maintaining a leakproof seal. Flex couplings reduce installation time and reduce labor costs.

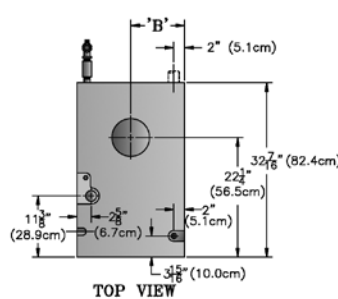
Dimensions and Specifications

Boiler Model	'A'	'B'	'C'	'D'		'E'	
				USA	Canada	USA	Canada
805H	20	10	7	24-3/4	24-3/4	16-1/8	16-1/8
806H	23-3/4	11-7/8	8	27-3/4	25-3/4	18	16
807H	27-1/2	13-3/4	9	28-3/4	25-3/4	18	16
808H	31-1/4	15-5/8	9	30-3/4	26-5/8	20	16
809H	35	17-1/2	10	33-1/2	26-3/8	22	15
810H	38-3/4	19-3/8	10	33-1/2	26-3/8	22	15

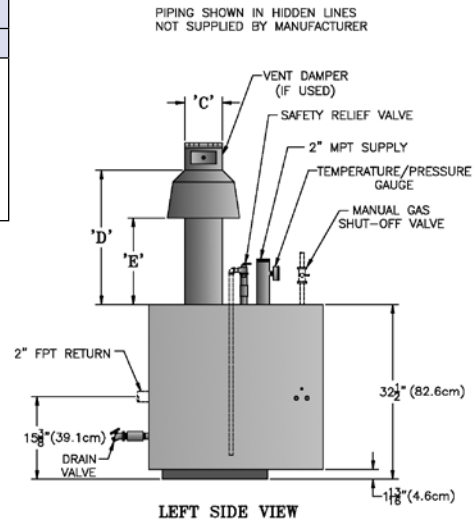
All dimensions are in inches



FRONT VIEW



TOP VIEW



LEFT SIDE VIEW

SERIES 8H RATINGS* Natural and LP Gas



BOILER MODEL (1)	RATINGS		I=B=R NET RATING WATER (MBH) (2)	EFFICIENCY	MINIMUM NATURAL GAS PRESSURE (Inches)		MINIMUM RECOMMENDED CHIMNEY SIZE ROUND DIA. (In.) X HT. (Ft.) (3)	WATER CONTENT (Gal.)	APPROX. SHIPPING WEIGHT (Lbs.)
	INPUT (MBH)	GROSS OUTPUT (MBH)			24V	EI			
805H	252	210 (4)	183	83.2 (4)	N/A	4.5	7 X 15	11.9	600
806H	315	262	228	83.1	4.5	4.5	8 X 15	13.9	690
807H	374	311	270	83.2	5.0	4.5	9 X 15	15.9	781
808H	433	360	313	83.3	N/A	4.5	9 X 15	17.9	871
809H	491	409	356	83.4	N/A	5.0	10 X 15	19.9	962
810H	550	459	399	83.4	N/A	5.0	10 X 15	21.9	1052

*Ratings shown are for installations at sea level and elevations up to 2,000 feet. For elevations above 2,000 feet, ratings should be reduced at the rate of four percent (4%) for each 1,000 feet above sea level.

- When ordering, use prefix P for packaged and K for knocked-down. Use suffix NSP for natural gas, standing pilot; NEI for natural gas, electronic ignition; PSP for LP gas, standing pilot; PEI for LP gas, electronic ignition.
- Net I=B=R ratings shown are based on normal I=B=R piping and pickup allowance of 1.15. Consult the Burnham Commercial for installations having unusual piping and pickup requirements such as intermittent system of operation, extensive piping systems, etc.
- 15 foot height is measured from top of drafthood to top of chimney.
- The 805 is a DOE heating capacity and AFUE efficiency. Furnished with electronic ignition and vent damper.

Maximum allowable working pressure: 50 PSI Water only.; 50 PSI Safety Relief Valve - Standard; 30 PSI Safety Relief Valve - Optional

Standard Equipment

Cast Iron Section Assembly	Aluminized Steel Burners	Blocked Vent Switch (BVS) - All Sizes	Electronic Ignition on 805H, 808H-810H for Natural or LP Gas
Deluxe Jacket with 3 inch Insulation	1" Gas Connection	Flame Roll-Out Switch (FRS) - All Sizes	24V Standing Pilot on 806H, 807H for Natural or LP Gas
100% Shut-off Gas Controls	2" Supply and Return Connections	L4080D High Limit Control	Pressure Temperature Gauge
Boiler Drain Valve	50 PSI Safety Relief Valve	750P-MT-120 Probe LWCO - 808H-810H only	
50VA Transformer and Junction Box	Stainless Steel Flue Baffles	High Limit Control with Manual Reset - L4006E (in addition to L4080)	
		- Packaged Boilers Only	

Packaged units are shipped packaged and wired in a reinforced cardboard container, for added protection. Drafthood, trim carton, low water cut-off and damper; when supplied, are shipped in separate cartons. Knocked-down units are shipped in a stackable container with sections assembled and mounted on the base with manifold and burners installed. Controls, trim, drafthood, and jacket are shipped together in the same container as the boiler.

Optional Equipment

30 PSI Safety Relief Valve	Electronic Control Sets to meet CSD-1
Electronic Ignition on 806H and 807H (standard on 805H, 808H thru 810H)	Vent Damper — 806H thru 810H (standard on 805H), available on standing pilot and electronic ignition models only
Intermittent Circulation (24V)	- not available with Electronic Control Sets
	Combustible Floor Shield

NOTE: NOT FOR DIRECT INSTALLATION ON COMBUSTIBLE FLOORING. A HEAT SHIELD IS REQUIRED AND AVAILABLE FOR COMBUSTIBLE FLOOR INSTALLATION AND CONCRETE INSTALLATION WHICH IS OVER A MATERIAL THAT IS SUBJECT TO MELTING (PVC, PEX RADIANT TUBING ETC.). NOT FOR INSTALLATIONS ON CARPET, EVEN WITH A COMBUSTIBLE FLOOR SHIELD.

Series 5B™

Commercial Atmospheric Gas-Fired
Hydronic Heat, Hot Water or Steam



■ Heating Capacities
401 to 1950 MBH Input



Series 5B - Hot Water or Steam Boiler

Maximum Allowable Working Pressure (MAWP): 50 PSI-Water; 15 PSI-Steam

Quality You Can Count On

The Burnham Commercial Series 5B boiler offers heating capacities and features that make it ideal for commercial, institutional and high rise residential heating applications. The rear outlet draught hood is specifically suited to installations with low ceiling heights.

The Series 5B boiler is rated at 50 PSI water or 15 PSI steam and has a combustion efficiency of 80%, meeting the requirements of ASHRAE 90.1.

Cast Iron Dependability

All Burnham Commercial boilers are designed for long term reliability and trouble-free performance. The Series 5B boiler is constructed with durable high silicone cast iron sections. Cast iron has the unique ability to absorb and transfer heat quickly and efficiently while providing unmatched durability. The pinned heating surface and vertical flue design extracts maximum heat while maintaining low draft losses — this results in higher efficiency



and lower fuel costs. Their compact design makes the sections easier to handle and assemble. Series 5B sections are easily maneuvered through standard doorways.

The Cast Iron Nipple Difference

Series 5B boiler sections are joined with durable cast iron nipples that last the life of the boiler. Nipples expand and contract along with the sections they join, ensuring the integrity of the entire section assembly.



Unlike gaskets, commonly used in some competitors' boiler assemblies, cast iron nipples resist petroleum based chemicals, including corrosion inhibitors, pump lubricants and antifreeze. Nipples do not break down from contact with boiler flue gases.

Commitment to Quality

Burnham Commercial, "America's Boiler Company," has earned a reputation for quality and dependability. Built for a variety of applications, the Series 5B is right for your next job. Consult your local Burnham Commercial sales representative or visit our new website, www.burnhamcommercialcastiron.com for details.

Tankless Heater Data - Water Boilers Only

Piping to heater(s) should run at side(s) or rear of boiler. Piping at rear of boiler should not interfere with removal of upper rear panel(s) for access to flueways for cleaning. Piping to accommodate two heaters must be proportionally sized in both cold and hot water supply headers to match heater ratings necessary for maximum hot water delivery at minimum pressure drop.

HEATER NUMBER	FOR USE IN BOILERS:	CONTINUOUS DRAW HEATER RATINGS 40°-140° RISE W/ 200° F BOILER TEMP.	PRESSURE DROP THROUGH HEATER	CLEARANCE REQUIREMENT FOR HEATER REMOVAL
AT-2	All Sizes	4-1/2 GPM	8.8 PSI	27"
AT-3	All Sizes	5 GPM	18.0 PSI	32"
AT-4	5008 and larger	6 GPM	1.2 PSI	42"

All Series 5B boilers are furnished with left and right heater end sections. It is possible to install a heater in both ends provided the number of sections in the boiler is not less than the sum of the number of sections required for each heater as indicated below.

Example: AT-3 + AT-4 heater=6+8=14 sections or larger boiler required.

AT-2 Heater—5 Sections

AT-3 Heater—6 Sections

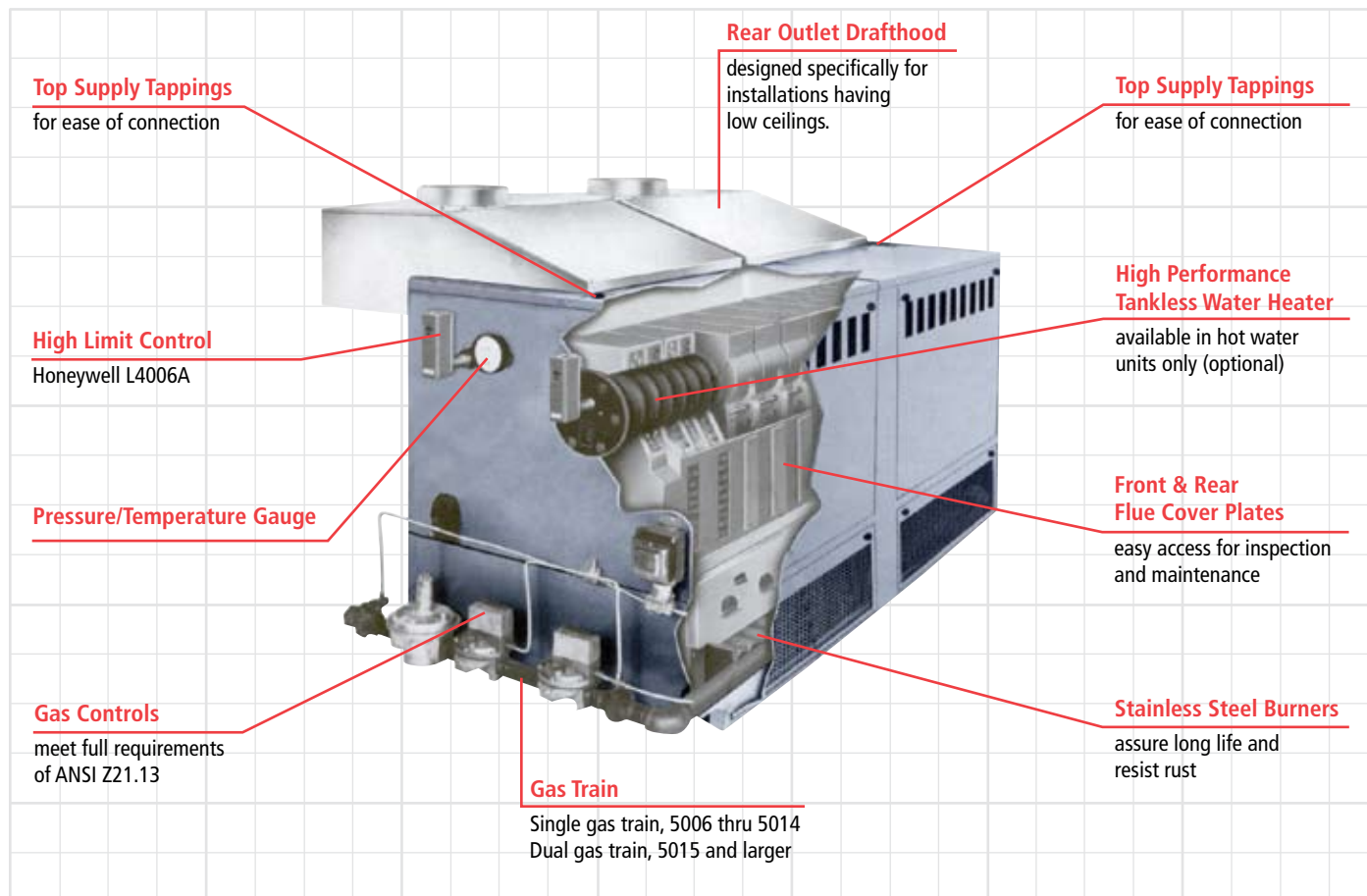
AT-4 Heater—8 Sections

Hot Water Supply Boiler Capacity

BOILER NO. HEATER NO.	5006B AT-3		5007B AT-3		5008B AT-4		5009B AT-4		5010B AT-4		5011B AT-2 & AT-3		5012B (2) AT-3		5013B (2) AT-3		5014B (2) AT-3		5015B (2) AT-3		5016B - 5026B (2) AT-4	
	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI	GPH	PSI
60° F Rise	500	40	500	40	600	12	600	12	600	12	950	37.5	1000	41	1000	41	1100	47.5	1100	47.5	1200	11
80° F Rise	375	26	375	26	450	3.2	450	3.2	450	3.2	713	24.5	750	26	750	26	826	30	826	30	900	3.2
100° F Rise	300	18	300	18	360	1.2	360	1.2	360	1.2	570	16.5	600	18	600	18	660	21	660	21	720	1.2

Ratings for hot water supply are based on the gross output of the boiler. PSI column indicates pressure drop through tankless heater.

Superior Quality



Standard Equipment

All Boilers - Sections unassembled including left and right heater ends; heater opening cover plates; base-burner manifold assembly; one assembly 5006B thru 5014B, two sub-assemblies 5015B thru 5026B; on-off firing gas control assembly; deluxe insulated jacket; rear outlet drafthood.

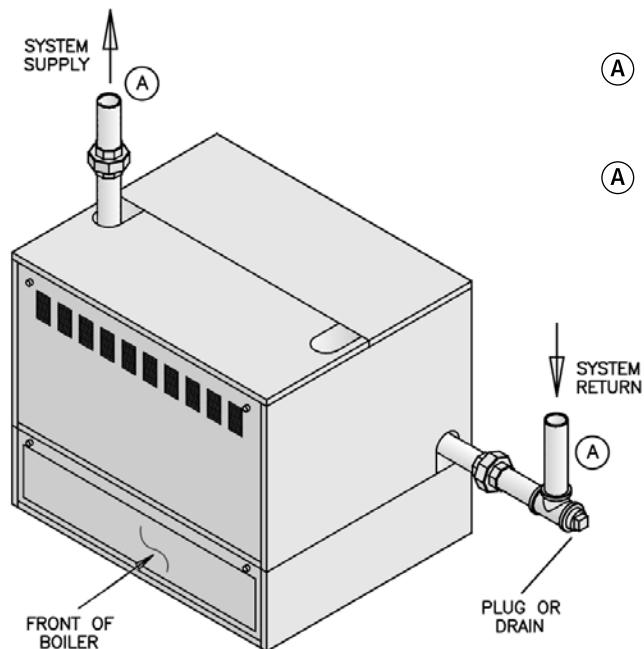
Water Trim - 50 PSI safety relief valve, pressure temperature gauge, L4006A high limit control, #64 LWCO.

Steam Trim - 15 PSI safety valve, steam gauge, gauge glass set, L404A high limit control, #67 BC2 LWCO.

USA Boilers - EI- Electronic control set: one set-5006B thru 5014B, two sets-5015B thru 5026B; provides electronic ignition; 100% safety shutoff; electronic supervision of pilot and intermittent pilot operation. Set includes: S7810M ignition control; Q348A pilot with sensing probe; gas train for 5006 - 5009 is Robertshaw 7000 DERHC combination gas valve; gas train for 5010 - 5026 consists of dual V88A gas valves, Q348A pilot, RV12 pilot regulator, pilot shutoff valve, main gas pressure regulator; 24V transformer furnished with all valve sets.

Canadian Boilers - Lubricated plug cock, RV-12 pilot line regulators are added to gas train. Natural Gas: Thermocouple standing pilot assembly, 100% shut-off; one set- 5006B thru 5014B, two sets-5015B thru 5024B; EO electronic control set on 5014B (one set) and 5026B (two sets) only; LP gas: EO electronic control set: one set-5007B thru 5014B, two sets-5015B thru 5026B.

Optional Equipment - Assembled sections; Firing sequences: low-high-off and low-high-low; Electronic control sets: EO-manual ignition, continuous pilot flame, protecto-relay; EOP-like EO plus prewired control panel with indication lights for power on, gas valve on, flame failure; EE-electronic ignition, intermittent pilot operation, protecto-relay; EEP-like EE plus prewired control panel with indicator lights for power on, gas valve on, flame failure. CSD-1 and Factory Mutual components are available, consult factory.

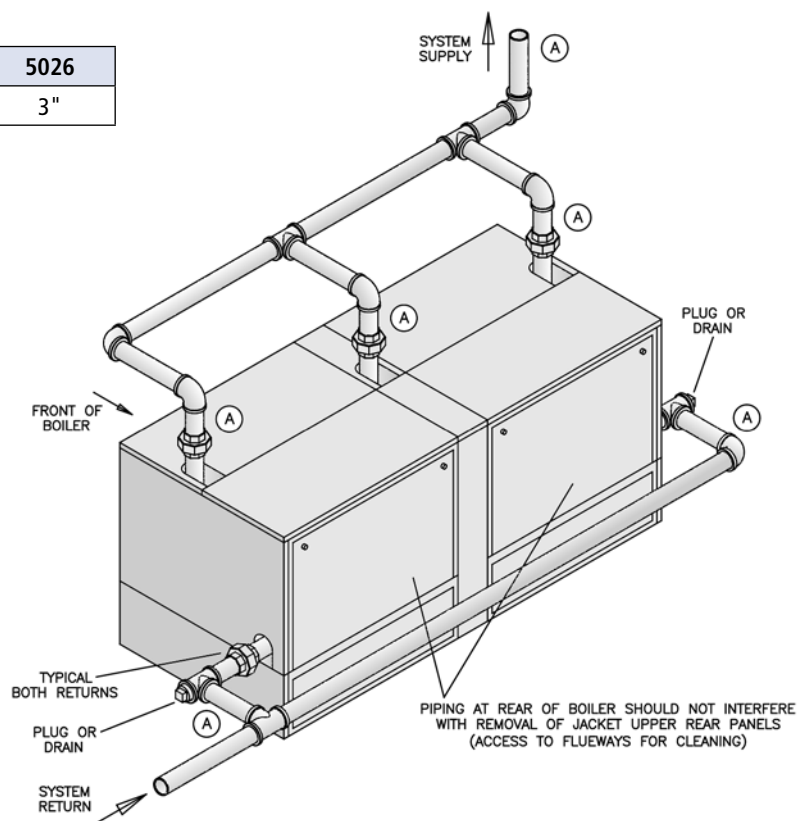


	5006	5007	5008	5009	5010	5011	5012
(A)	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"

	5013	5014	5015	5016	5017	5018	5019
(A)	2-1/2"	3"	3"	3"	3"	3"	3"

Note: 1 supply connection & 1 return connection sizes 5006 thru 5019

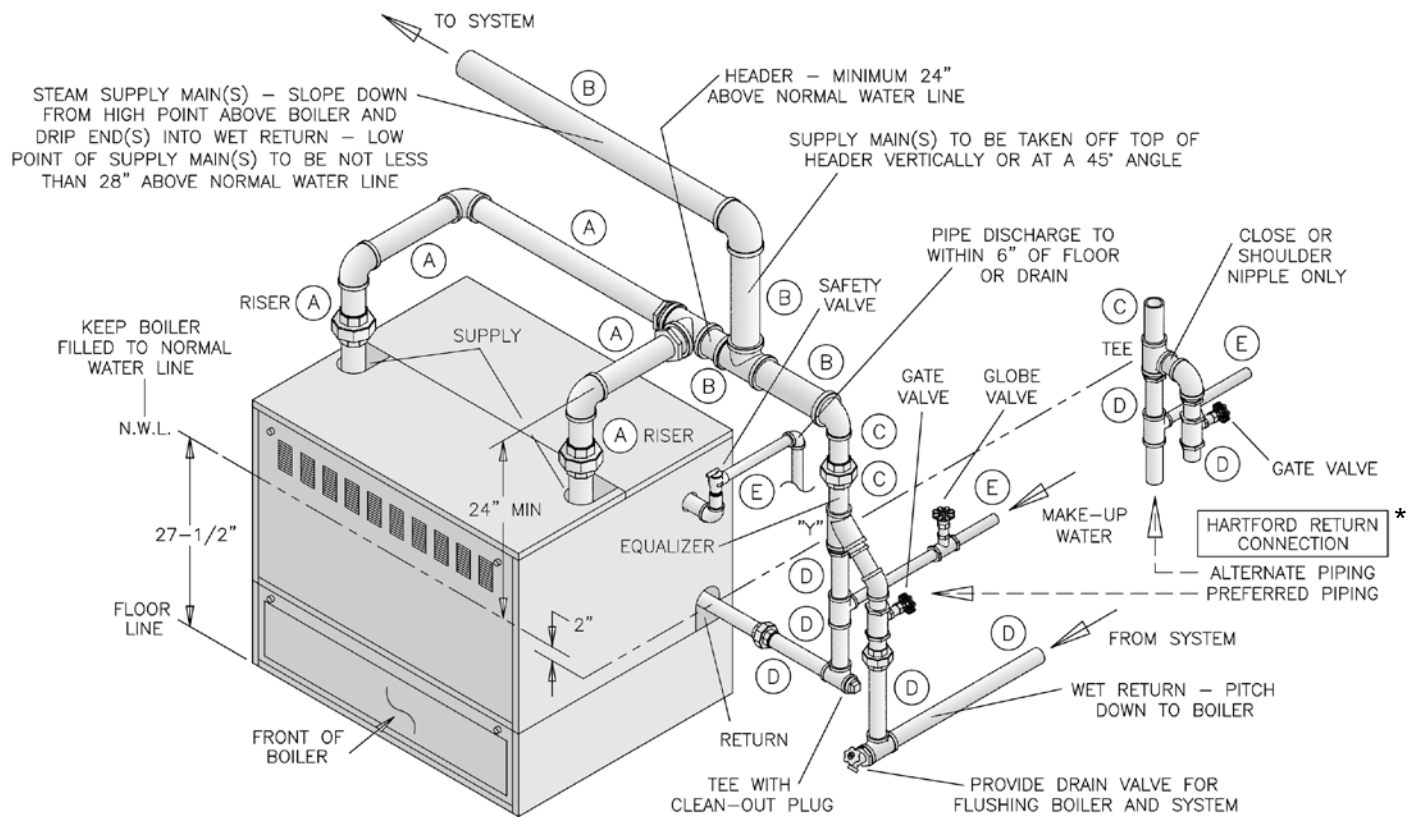
	5020	5021	5022	5024	5026
(A)	3"	3"	3"	3"	3"



Note: 3 supply connections & 2 return connections sizes 5020 thru 5026

Recommended Boiler Piping

Steam - Gravity Return



1 or 2 Supply Connections - 5006 thru 5014

*Required on gravity return systems

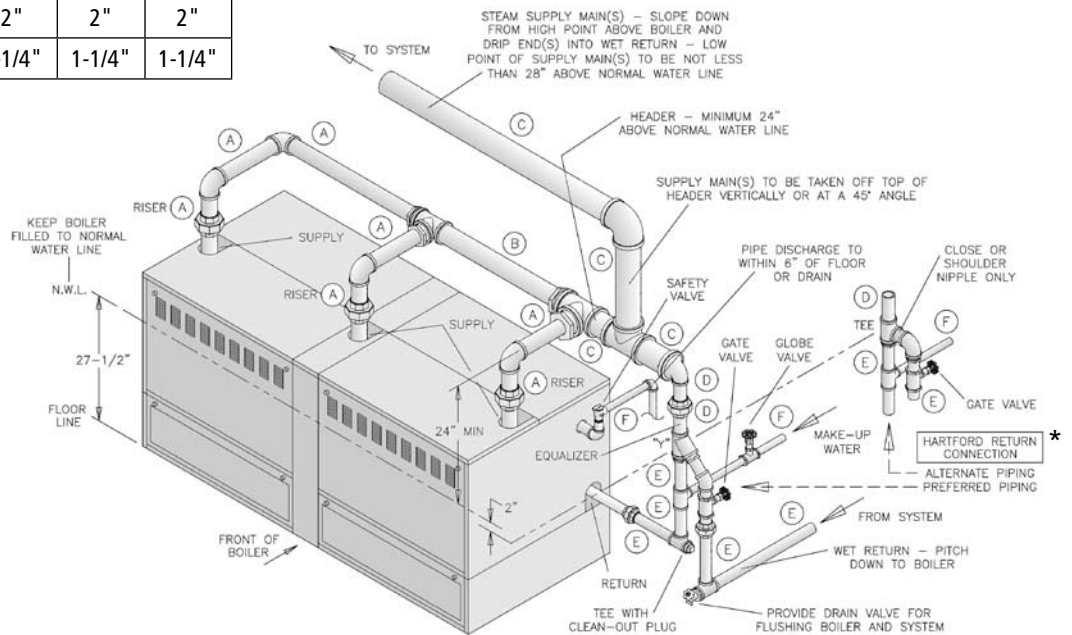
	5006	5007	5008	5009	5010	5011	5012	5013	5014
(A)	3"	3"	3"	3"	3"	3"	3"	3"	3"
(B)	3"	3"	4"	4"	4"	4"	5"	5"	5"
(C)	2"	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"
(D)	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2"	2"
(E)	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1-1/4"	1-1/4"

Second supply riser optional on 5006 and 5007

	5015	5016	5017	5018	5019	5020
(A)	3"	3"	3"	3"	3"	3"
(B)	4"	4"	4"	4"	4"	4"
(C)	5"	5"	5"	5"	5"	5"
(D)	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"
(E)	2"	2"	2"	2"	2"	2"
(F)	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"

3 supply connections
boiler sizes 5015 thru 5020

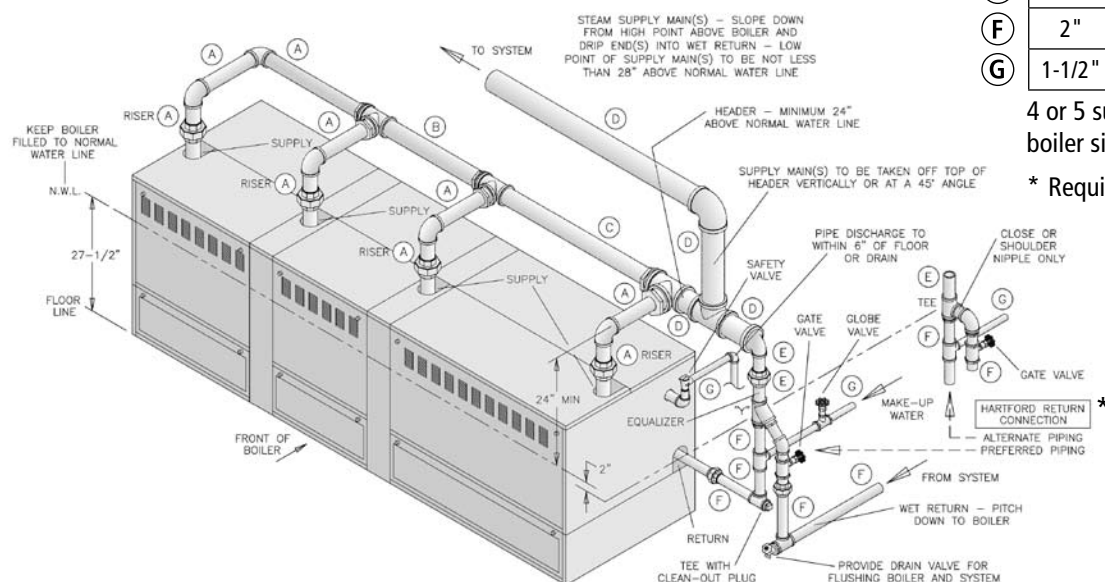
* Required on gravity return
systems



	5021	5022	5024	5026
(A)	3"	3"	3"	3"
(B)	4"	4"	4"	4"
(C)	5"	5"	5"	5"
(D)	6"	6"	6"	6"
(E)	2-1/2"	2-1/2"	2-1/2"	3"
(F)	2"	2"	2"	2-1/2"
(G)	1-1/2"	1-1/2"	1-1/2"	1-1/2"

4 or 5 supply connections
boiler sizes 5021 thru 5026

* Required on gravity return systems



SERIES 5B RATINGS



BOILER MODEL (1)	RATINGS MBH (2) (3)		NET RATINGS (4) (5)			USA BOILER H.P.	(NO.) & SIZE OF FLUE OUTLETS	BREECHING DIAMETER (INCHES)	RECOMMENDED CHIMNEY SIZE (6)		APPROX. SHIPPING WEIGHT (LBS.)
	INPUT	GROSS OUTPUT	WATER	STEAM					ROUND DIA. IN. x FT.	RECTANGULAR IN. x IN. x FT.	
			I=B=R MBH	I=B=R SQ. FT.	I=B=R MBH						
5006B	401	321	279	1004	241	9.58	(1) 9"	9	10 x 15	12 x 12 x 15	1160
5007B	468	375	326	1171	281	11.04	(1) 10"	10	10 x 15	12 x 12 x 15	1340
5008B	546	437	380	1367	328	12.88	(1) 12"	12	12 x 15	12 x 16 x 15	1525
5009B	624	500	434	1558	374	14.73	(1) 12"	12	12 x 15	12 x 16 x 15	1720
5010B	702	562	488	1754	421	16.57	(1) 12"	12	12 x 15	12 x 16 x 15	1895
5011B	780	624	543	1950	468	18.41	(2) 9"	14	15 x 15	16 x 16 x 15	2085
5012B	858	687	597	2146	515	20.25	(1) 9", (1) 10"	14	15 x 15	16 x 16 x 15	2280
5013B	936	749	651	2342	562	22.09	(2) 10"	14	15 x 15	16 x 16 x 15	2460
5014B	1014	812	705	2538	609	23.93	(1) 10", (1) 12"	14	15 x 20	16 x 16 x 20	2640
5015B	1092	874	760	2729	655	25.77	(2) 12"	14	15 x 20	16 x 16 x 20	2870
5016B	1170	936	814	2925	702	27.61	(2) 12"	14	15 x 20	16 x 16 x 20	3070
5017B	1248	999	868	3121	749	29.45	(2) 12"	14	15 x 20	16 x 16 x 20	3265
5018B	1326	1061	922	3317	796	31.29	(2) 12"	16	15 x 20	16 x 16 x 20	3445
5019B	1404	1124	977	3513	843	33.13	(2) 12"	16	18 x 20	16 x 20 x 20	3620
5020B	1482	1186	1031	3704	889	34.97	(2) 9", (1) 12"	16	18 x 20	16 x 20 x 20	3810
5021B	1560	1248	1085	3900	936	36.82	(1) 9", (1) 10", (1) 12"	16	18 x 20	16 x 20 x 20	4005
5022B	1638	1311	1139	4113	987	38.66	(2) 10", (1) 12"	16	18 x 20	16 x 16 x 20	4185
5024B	1794	1436	1248	4546	1091	42.34	(1) 9", (3) 10"	18	18 x 20	20 x 20 x 20	4530
5026B	1950	1560	1357	4975	1194	46.02	(3) 10", (1) 12"	18	18 x 20	20 x 20 x 20	4895

- (1) **Boiler Model Prefixes:** K - Knockdown; A - Assembled Sections. **Suffixes:** W - Water; S - Steam. N - Natural Gas; P - LP Gas. EI - Electronic Ignition; EO - Electronically Supervised Standing Pilot; EOP - Electronically Supervised Standing Pilot with Control Panel; EE - Electronically Supervised Electronic Ignition; EEP - Electronically Supervised Electronic Ignition with Control Panel. (All Series 5B boiler models reach a combustion efficiency of 80%.)
- (2) Ratings provided are for installations from sea level to 2000 ft. elevation. For altitudes above 2000 ft.: USA—Reduce ratings 4% for each 1000 ft. above sea level. Canada—certified for use at altitudes to 4500 ft. above sea level. Each installation, however, must be authorized by local authorities.
- (3) LP gas ratings reduced 6-1/4% from natural gas ratings.
- (4) Net I=B=R ratings shown are based on normal I=B=R piping and pick-up factor. Water: 1.15 (all sizes) Steam: 1.333 (5006 thru 5021), 1.329 (5022), 1.317 (5024), 1.307 (5026).
- (5) Net ratings are U. S. A. only.
- (6) Based on year-round use with 6ft. breechings and no more than one elbow. Chimney height measured from installation floor line to chimney to flue size based on nominal size of unlined chimney. Flue lined with largest flue liner which will fit within these dimensions is constructed to have same effective flue area. Individual vents—If boiler is equipped with individual vertical vent riser(s) of same size as flue outlet(s) on draft diver these vent(s) should not be less than 5 ft. in height as measured from top of draft hood. For other chimney and breeching combinations, consult manufacturer.

Maximum Allowable Working Pressure (MAWP) - 50 PSI Water, 15 PSI Steam

Gas Supply Pressure – Natural Gas: Maximum: 14" W.C.

Minimum: 5.5" W.C. (5009, 5011 thru 5014 and 5020 thru 5026)

Minimum: 5" W.C. (5006 thru 5008, 5010 and 5015 thru 5019)

LP Gas: Maximum: 14" W.C. – Minimum: 11" W.C.

Not for installation on combustible flooring.



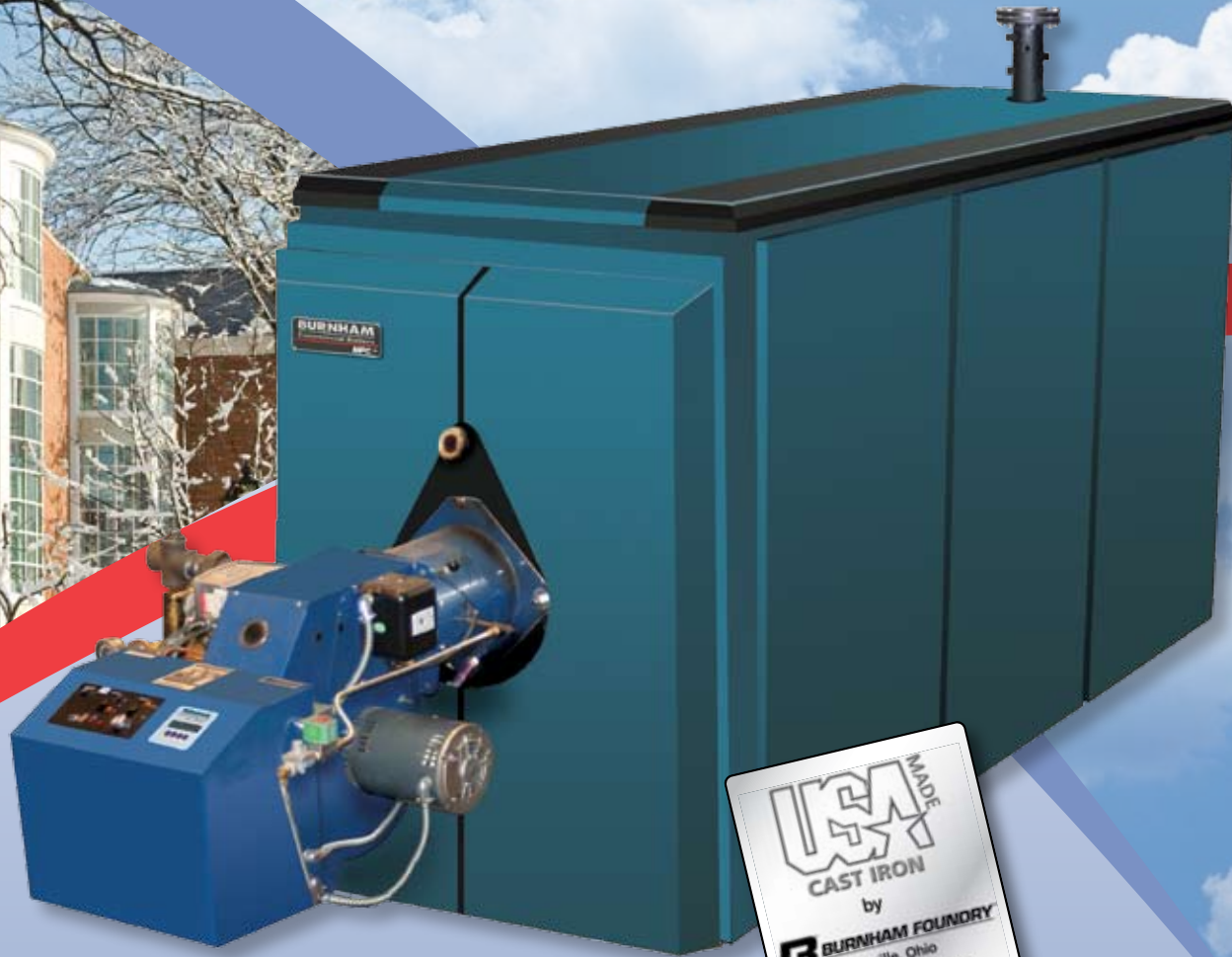
Burnham Commercial - Lancaster, PA

Phone: 1-877-567-4328

www.burnhamcommercial.com

MPC

High Efficiency Cast Iron Multi-Pass Commercial Water Boiler



- Up to 89% efficient!
- Unsurpassed thermal shock protection
- Innovative plug & play integrated boiler operating controls
- Commercial-grade, 3-pass sections, utilizing Burnham Commercial's exclusive BC25-HSi cast iron
- From 4 to 18 sections, rated at 500,000 to 3.6 million BTUs
- Oil, gas, or oil/gas combination, low NOx option available



*Engineered to Outperform
All Other Commercial Cast
Iron Boilers*

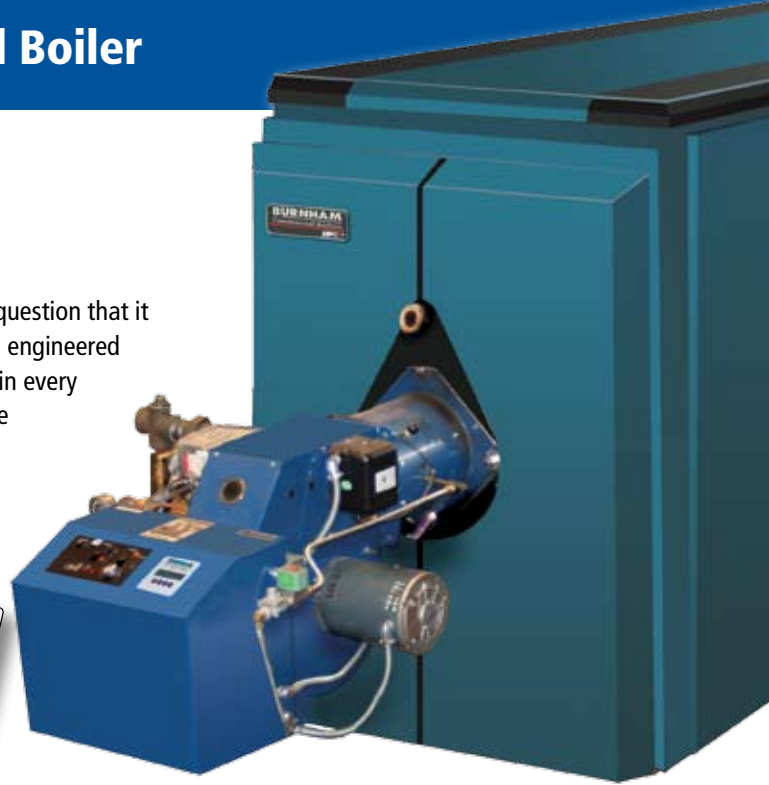
BURNHAM®
Commercial Boilers

MPC

Multi-Pass Commercial Boiler

All New from Top to Bottom with Industry Leading Technology

Take one look at the MPC™, Multi-Pass Commercial boiler, and there is no question that it is setting new standards for cast iron commercial boilers. The MPC has been engineered from start to finish with specifications that meet or exceed the competition in every way...from the 3-pass sectional cast iron design, conveniently located single 4-inch supply and controls manifold, and a specially designed Return Water Mixing Tube (RWMT)... to a rugged commercial grade jacket and uniquely integrated SBC control system. Packaged and firetested, MPC boilers are the only American-made commercial cast iron boilers to carry the UL Listing. In addition, the MPC is the first commercial boiler of its kind to be completely manufactured in the U.S.A. by an American company...**Burnham Commercial.**



MPC Features & Benefits

High Efficiency Commercial Boiler – *Best in class!*

- Efficiencies of up to 89% without the use of a secondary, condensing heat exchanger provides for exceptional fuel savings – far exceeds ENERGY STAR® standards
- Capable of extremely low NOx operation – less than 10 ppm
- Fully compliant with LEEDS® building standards...MPC is the most environmentally friendly commercial boiler on the market

3-Pass Design

- Advanced 3-pass cast iron sections engineered and manufactured in the U.S.A., designed to maximize heating system efficiencies and provide substantial energy savings over single-pass boilers
- MPC sections are assembled with Burnham Commercial's proven cast iron nipple construction that does not degrade with heat thus eliminating any concerns associated with competitive section sealing techniques
- Advanced high-temperature silicon-coated rope gasket is compressed into a tongue-and-groove area cast into each boiler section to ensure a durable, gas tight seal between sections

Built-in Thermal Shock Protection

- Designed to operate at unprecedented 80°F minimum return water temperature
 - Minimum supply water temperature is 130°F
 - Maximum water temperature differential (ΔT) of 80°F
- Equipped with integral return water mixing tube (RWMT) that evenly distributes the return water into each section
- No need for external mixing devices or complicated piping, saving installation time and money

UL Listed – A Burnham Commercial Exclusive!

- Only American-made commercial cast iron boiler with UL Listing
- Standard on factory packaged / firetested MPC boilers
- Safety benefit, virtually unmatched in the industry

American-Made Cast Iron Construction–BC25-HSi

- Burnham Commercial's unique BC25-HSi cast iron has an extremely high silicon content, making it stronger and more flexible
 - Offers better thermal shock resistance and greater heat transfer capabilities than other cast iron products
- BC25-HSi's properties allow Burnham Commercial to maintain the highest level of quality from start to finish, and provide a product that is optimized for hydronic heating applications

New Jacket Design

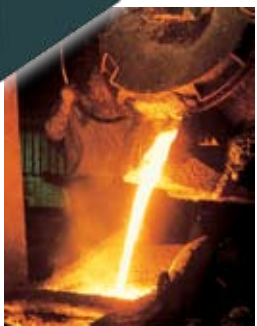
- Standard 4-inch insulation on all sizes reduces jacket heat loss, reduces boiler room temperatures and helps increase efficiency
- Jacket side panels interlock and mount to the frame without screws
- A concealed chaseway, located in the top panels, hides wiring for a clean, modern appearance

Burner Swing Door

- Left or right opening, provides unobstructed access to the combustion chamber and all flue passages

Multiple Burner Offerings

- The MPC is optimized for "full modulating" operation
 - Also available for low-high-low firing
- Application tested and approved for use with Beckett oil and gas burners and Power Flame oil, gas, and gas/oil burners
- Burnham Commercial's SBC™ module is an available option. SBC comes integrated into the Power Flame burner control panel to provide unsurpassed boiler and system control
 - Factory installed SBC modules (mounted exclusively on Power Flame burners) are UL Listed



All MPC cast iron boiler sections are poured at Burnham Foundry, LLC in Zanesville, Ohio



Three-pass cast iron sections are the key to providing the MPC's remarkable efficiency



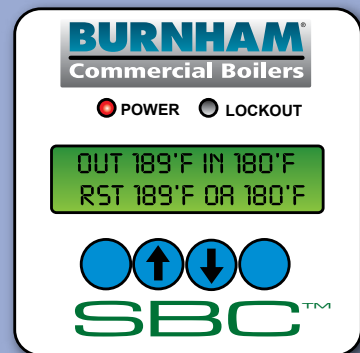
Each cast iron section is precision machined to tolerances within 0.001 of an inch

SBC™

Integrated Boiler Control System

The Burnham Commercial SBC is a complete boiler monitoring and automation system. Available as an option, this exclusive feature was designed and developed by Burnham Commercial engineers and is available ONLY on Burnham Commercial products.

- Designed to maximize system efficiency and minimize energy usage
- Easily connected to building management systems
- Proven control platform, used successfully for years at other Burnham companies
- Fail-safe design insures boiler operation



**Only available from
Burnham Commercial!**

SBC Exclusives

Advanced Adaptability

- Easily integrated into existing or new building management systems
- Simplified connections available to most building management systems through Modbus® or standard 0-10 volt signals
- Uses sophisticated PID control logic for complete boiler system control
- Performs control functions for both single and multiple boilers

Peer-To-Peer Network

- Includes lead-lag sequencer for up to eight (8) fully modulating boilers
- Capable of auto rotation, outdoor reset and peer-to-peer communication
- "Plug and play" communication by simply connecting a RJ11 telephone line between boilers
- Provides precise boiler coordination by sequencing boilers based on both remote system water temperature and boiler modulation rate.
- Boilers are modulated in "unison", all at the same firing rate to ensure even heat distribution

Fail-Safe System Operations

- Allows continued boiler operation in the event of selected sensor failure or building management system failure

Boiler Monitoring & Diagnostic Displays

- Two-line by sixteen character LCD display

- Automatically presents boiler sequence, alarm, hold and lockout messages
- Diagnostic menu displays the last 10 alarm messages and the boiler return temperature alarm history

Modulation Rate and On/Off Modes

- Controls the boiler modulation and on/ off output based on the supply water temperature and an operator adjusted setpoint.
- Can respond to remote system water, outside air temperatures, Domestic Hot Water Priority (DHWP) or Energy Management Systems (EMS)

Outdoor Air Temperature Reset

- Saves fuel by reducing the supply temperature of a heating boiler as the outside air temperature increases

Warm Weather Shutdown (WWSD)

- Prevents the boiler, boiler pump and/or the system pump from starting during warm weather

Domestic Hot Water Priority (DHWP)

- Continuous supply of hot water, even during warmer months

System Control Outputs

- Fully integrated automation of mixing valves, boiler pumps, system pumps, and standby system pumps
- Controls are field selectable through simple yes/no menu selections

Specifications

Minimum return water temperature: 80°F
Minimum supply water temperature: 130°F
Maximum Delta T: 80°F



Maximum operating temperature: 250°F
Maximum allowable working pressure (MAWP): 80PSI

Boiler Model	Boiler HP	Burner Input			Gross Output (MBH)	Net I=B=R (MBH)	Combustion Efficiency		Heating Surface (Sq. Ft.)	Furnace Volume (Cu. Ft.)	Press. in Firebox (In. W.C.)	Vent Diam. (In.)*	Water Content (Gal.)	Shipping Weight (Lbs.)
		Oil (GPH)	Oil (MBH)	Gas (MBH)			Oil (%)	Gas (%)						
MPC4	12.7	3.5	497	500	424	369	89.0	86.3	75.0	14.5	0.10	7	63	2370
MPC5	19.5	5.5	770	773	652	567	88.8	86.1	95.3	18.0	0.19	7	78	2821
MPC6	25.0	7.1	994	995	837	728	88.7	86.0	115.5	21.6	0.28	8	93	3272
MPC7	30.6	8.7	1218	1216	1023	890	88.7	86.0	135.8	25.1	0.34	8	108	3733
MPC8	36.1	10.2	1428	1438	1209	1051	88.6	85.9	156.1	28.6	0.39	8	123	4194
MPC9	41.7	11.8	1652	1660	1395	1213	88.6	85.9	176.4	32.2	0.45	10	137	4655
MPC10	47.2	13.4	1876	1881	1580	1374	88.6	85.9	196.6	35.7	0.50	10	152	5116
MPC11	52.8	15.0	2100	2103	1766	1536	88.5	85.9	216.9	39.2	0.66	10	167	5577
MPC12	58.3	16.6	2324	2325	1951	1697	88.5	85.8	237.2	42.8	0.82	10	182	6073
MPC13	63.8	18.2	2548	2547	2137	1585	88.5	85.8	257.5	46.3	0.98	12	196	6544
MPC14	69.4	19.8	2772	2769	2322	2019	88.5	85.8	277.7	49.8	1.14	12	211	7015
MPC15	74.9	21.5	3010	2991	2508	2181	88.4	85.8	298.0	53.4	1.30	12	226	7486
MPC16	80.5	23.0	3220	3213	2694	2343	88.4	85.8	318.3	56.9	1.30	12	241	7957
MPC17	86.0	24.5	3430	3435	2880	2504	88.4	85.8	338.6	60.4	1.40	12	256	8438
MPC18	91.6	26.0	3640	3657	3065	2665	88.4	85.8	358.8	64.0	1.50	12	270	8919

NOTES: Model No. Suffix: "N"=natural gas-fired; "P"=LP gas-fired; "O"=oil fired; "C"=combo natural gas/oil fired; "D"=combo LP gas/oil-fired

For high altitudes, ratings should be reduced at rate of 4% per 1,000 ft. (over 1000 ft. for oil / over 2,000 ft. for gas)

Safety Relief Valve Set Pressure: Standard = 50 PSI; Optional = 30 PSI or 80 PSI

* Vent diameters less than 14 inches require a reducer

Dimensions

CASTING WEIGHTS:

Front Section: 434 lb.

Center Section(s): 434 lb.

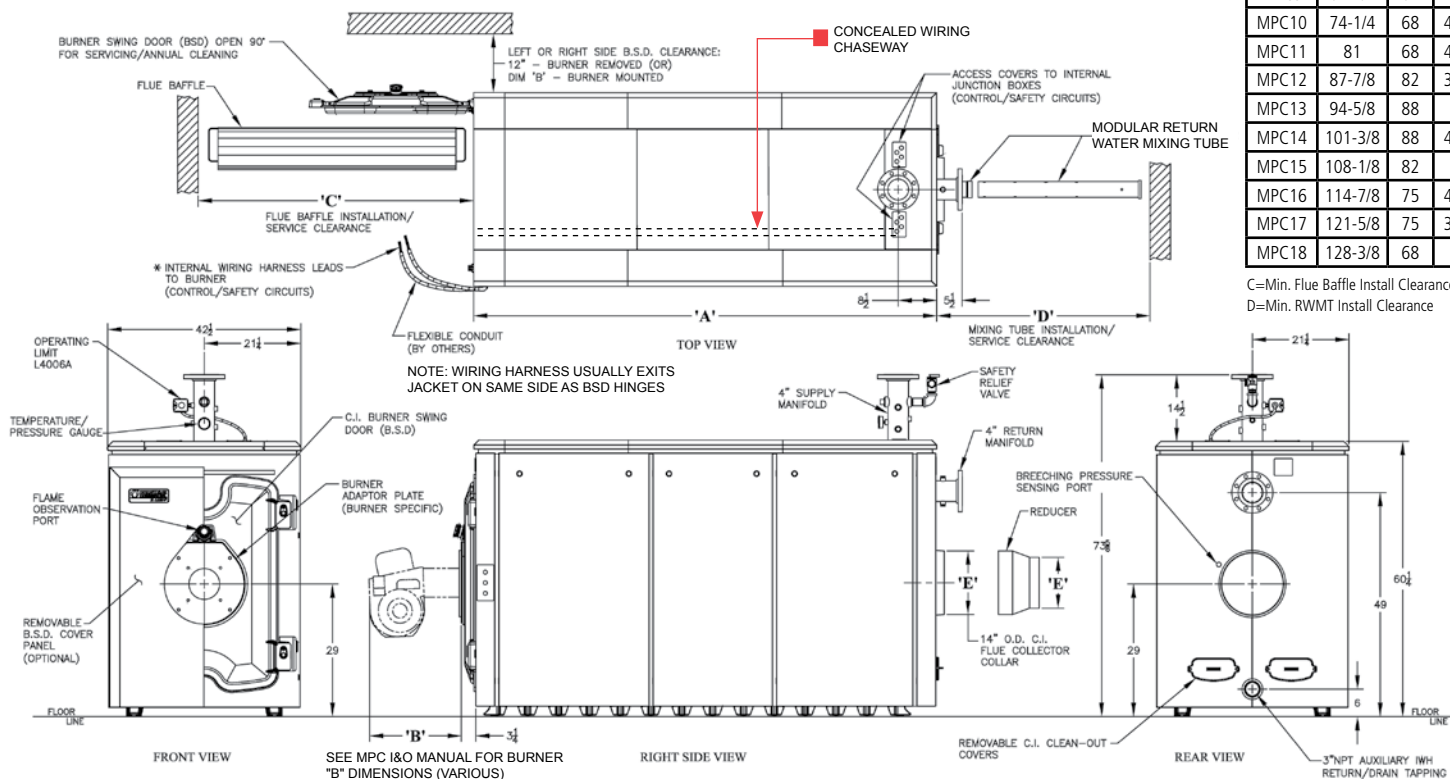
Rear Section: 543 lb.

CERTIFIED TO CSA STANDARDS:

MPC Boilers are certified to CSA B140.7-05 and CSA B140.0-03 standards as well as CAN1-3.1-77.

Boiler Model	A (In.)	C	D
		(Min. In.)	
MPC4	33-3/4	35	33-3/8
MPC5	40-1/2	35	40-1/8
MPC6	47-1/4	41	46-7/8
MPC7	54	48	33-1/4
MPC8	60-3/4	55	40
MPC9	67-1/2	61	46-3/4
MPC10	74-1/4	68	46-3/4
MPC11	81	68	46-3/4
MPC12	87-7/8	82	33-1/4
MPC13	94-5/8	88	40
MPC14	101-3/8	88	46-3/4
MPC15	108-1/8	82	40
MPC16	114-7/8	75	46-3/4
MPC17	121-5/8	75	33-1/4
MPC18	128-3/8	68	40

C=Min. Flue Baffle Install Clearance
D=Min. RWMT Install Clearance



V9 Series

Cast Iron Commercial Water or Steam Boiler



- 447 to 2367 MBH Input
- Oil, Gas, or Oil/Gas Combination
- 30, 50, or 80 PSI
- Cast Iron Sectional Design
- Water or Steam
- Top or Rear Venting
- Exclusive Optional SBC™ Boiler Control
 - Maximizes System Efficiency

BURNHAM®
Commercial Boilers

V9 Series

Cast Iron Commercial Water or Steam Boiler

Your Commercial Heating Solution!

Available in ten sizes with gross output ratings from 347 to 1900 MBH, the V9 Series fires gas, oil or combination gas/oil and is available equipped with either steam or water trim. The product meets the energy efficiency requirements of ASHRAE 90.1 with combustion efficiencies up to 86%.

Cast iron construction, ease of assembly, two venting options, and stringent testing methods make the V9 Series boiler by Burnham Commercial your commercial heating solution.

American-Made Cast Iron Construction—BC25-HSi

Burnham Commercial's unique BC25-HSi cast iron has an extremely high silicon content, making it stronger and more flexible. It offers better thermal shock resistance and greater heat transfer capabilities than other cast iron products. BC25-HSi's properties allow Burnham Commercial to maintain the highest level of quality from start to finish, and provide a product that is optimized for hydronic heating applications.

- **Manufactured with Quality**

Cast iron sections are poured at Burnham Foundry, LLC in Zanesville Ohio. The foundry uses state-of-the-art technology and production techniques which ensures the availability of high quality boiler sections.

- **Cast Iron Nipple Difference**

While gaskets used by other manufacturers can break down from oils and contaminants, the V9's cast iron nipples remain unaffected, ensuring long life and eliminating costly repairs.

The V9 section assembly includes precision machined cast iron nipples that expand and contract along with the sections they join, providing integrity to the entire assembly. Additionally, cast iron nipples resist boiler flue gases and petroleum based chemicals, including corrosion inhibitors, pump lubricants and antifreeze.



Installation & Service Flexibility

The cast iron sectional design of the V9 boiler makes it easy to maneuver through doorways and into the boiler room. In addition to being shipped as loose sections, the boiler is available with factory-assembled sections or as a completely packaged and fire-tested unit. Packaged units, fastened to a steel skid, are easily maneuvered through standard 36" x 80" doorways.

- **Hassle-free Section Assembly**

V9 boiler sections have reinforced lugs that are used to assemble the sections with individual draw rods resulting in fast, strain-free assembly.



The sections can be assembled using two common tools—a 3/4" drive ratchet with a 1-1/16" deep socket and wrench. The sections are surface ground to ensure smooth surface mating. An elastic sealant and fiberglass rope are used on all section joints for a completely sealed and pressure-tight assembly.

- **Extensive Testing Methods**

Each boiler section is hydrostatically tested at 2-1/2 times the rated working pressure at the foundry. Factory assembled sections are tested at 1.5 times the rated working pressure.

- **Rear or Top Venting**

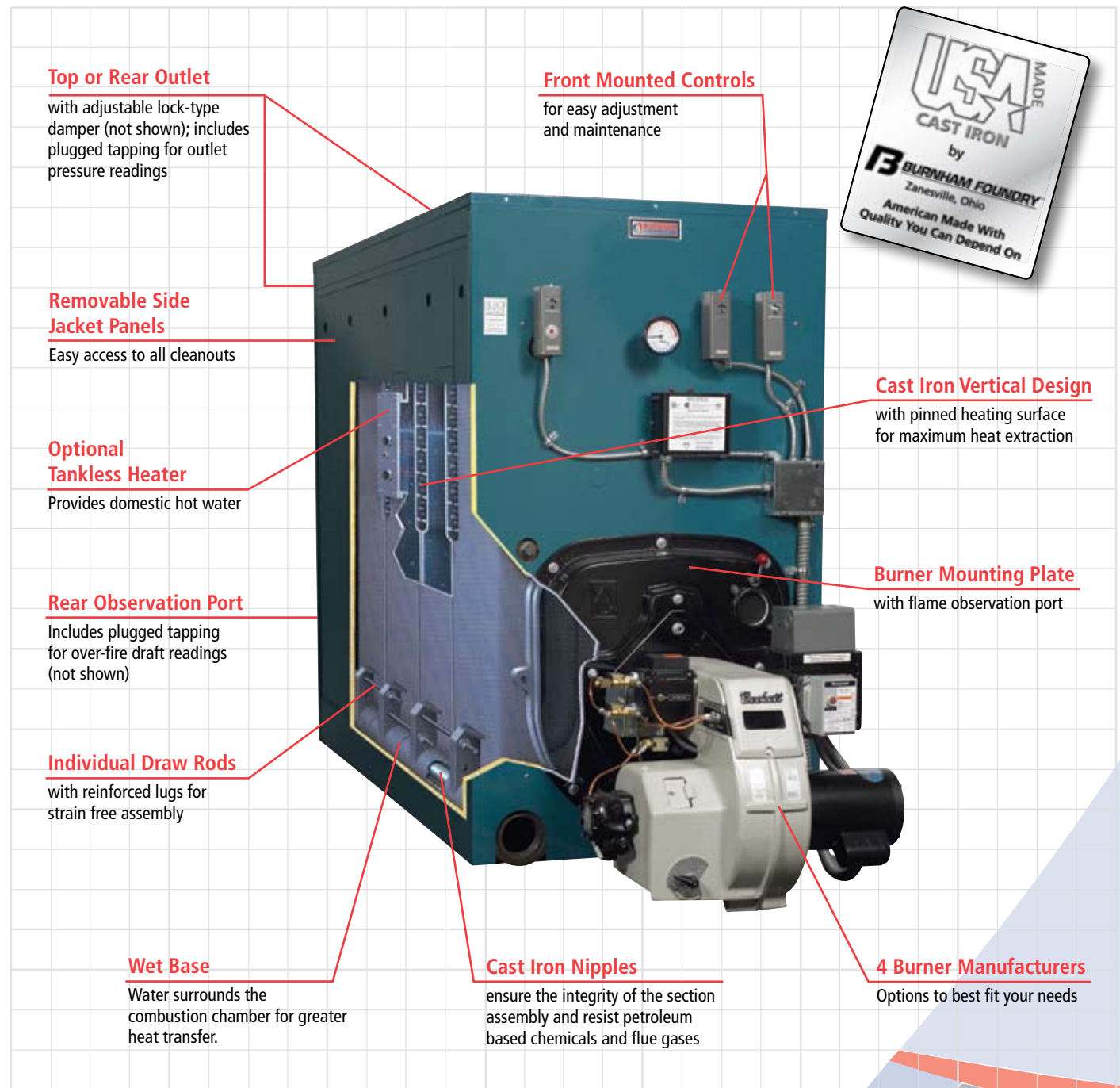
As a forced draft boiler, the V9 provides optimum draft for controlled efficiency, eliminating the need for high chimneys or induced draft fans. A unique feature of the V9 boiler is it can be vented from the rear or the top. This enables easy chimney or sidewall venting for maximum installation flexibility.

Top outlet venting saves floor space and reduces installation time and materials. A plugged tapping is provided to take flue outlet pressure readings.



V9 Series - Hot Water or Steam Boiler

Maximum Allowable Working Pressure (MAWP): 80 PSI-Water; 15 PSI-Steam



Commitment to Quality

Burnham Commercial, "America's Boiler Company," has earned a reputation for quality and dependability. Built for a variety of applications, the V9 Series is right for your next job.

SBC™ Boiler Control System

Exclusive Optional Feature for Burnham Commercial Boilers

SBC

Integrated Boiler Control System

The Burnham Commercial SBC is a complete boiler monitoring and automation system. Available as an option, this exclusive feature was developed by Burnham Commercial engineers and is designed specifically for use on Burnham Commercial boilers.

- Designed to maximize system efficiency and minimize energy usage
- Easily connected to building management systems
- Proven control platform
- Fail-safe design insures boiler operation

SBC Exclusives

Advanced Adaptability

- Easily integrated into existing or new building management systems
- Simplified connections available to most building management systems through Modbus® or standard 0-10 volt signals
- Uses sophisticated PID control logic for complete boiler system control
- Performs control functions for both single and multiple boilers

Peer-To-Peer Network

- Includes lead-lag sequencer for up to eight (8) fully modulating boilers
- Capable of auto rotation, outdoor reset and peer-to-peer communication
- "Plug and play" communication by simply connecting a RJ11 telephone line between boilers
- Provides precise boiler coordination by sequencing boilers based on both remote system water temperature and boiler modulation rate.
- Boilers are modulated in "unison", all at the same firing rate to ensure even heat distribution

Fail-Safe System Operations

- Allows continued boiler operation in the event of selected sensor failure or building management system failure



**The SBC Boiler
Control System...
Only available from
Burnham Commercial!**

Boiler Monitoring & Diagnostic Displays

- Two-line by sixteen character LCD display
- Automatically presents boiler sequence, alarm, hold and lockout messages
- Diagnostic menu displays the last 10 alarm messages and the boiler return temperature alarm history

Modulation Rate and On/Off Modes

- Controls the boiler modulation and on/ off output based on the supply water temperature and an operator adjusted setpoint
- Can respond to remote system water, outside air temperatures, Domestic Hot Water Priority (DHWP) or Energy Management Systems (EMS)

Outdoor Air Temperature Reset

- Saves fuel by reducing the supply temperature of a heating boiler as the outside air temperature increases

Warm Weather Shutdown (WWSD)

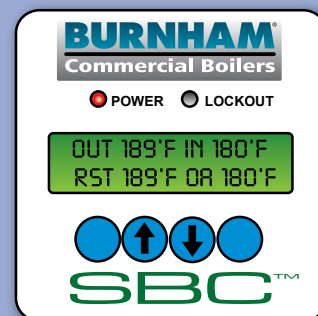
- Prevents the boiler, boiler pump and/or the system pump from starting during warm weather

Domestic Hot Water Priority (DHWP)

- Continuous supply of hot water, even during warmer months

System Control Outputs

- Fully integrated automation of mixing valves, boiler pumps, system pumps, and standby system pumps
- Control parameters are field selectable through simple yes/no menu selections



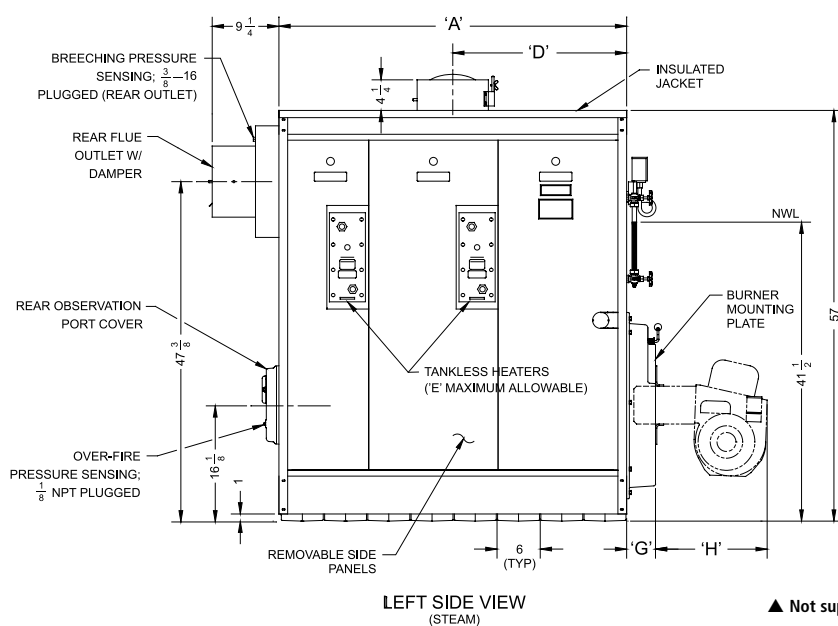
V9 Series Dimensions

BOILER MODEL	# OF SECTIONS	'A'	'B'	# OF STEAM RISERS	'C'	'D'	MAX. HEATERS 'E'	FLUE OUTLET DIA. 'F'	BURNER MOUNTING PLATE/ BURNER DIMENSION*						APPROX. ASSEMB. SECTION WEIGHT LBS.	APPROX. K.D. BLR/ SHIP WEIGHT LBS. **
									BECKETT		CARLIN	POWERFLAME		WEBSTER		
									'CF' 'G'/'H'	'CG' 'G'/'H'	'G'/'H'	'JR.' 'G'/'H'	'C' 'G'/'H'	'JB' 'G'/'H'		
V903A	3	18-1/4	12	1	—	9-1/8	1	7	8 / 9-3/4	8 / 20-7/8	8 / 23-1/4	8 / 20-1/8	—	—	908	1278
V904A	4	24-1/4	18	1	—	12-1/8	1	7	8 / 11-3/4	8 / 21-5/8	8 / 23-1/4	8 / 20-1/8	8 / 30	—	1194	1590
V905A	5	30-1/4	24	1	—	15-1/8	1	8	8 / 11-3/4	8 / 21-5/8	4 / 27-3/8	8 / 20-1/8	8 / 30	4 / 25	1480	1902
V906A	6	36-1/4	30	1	—	18-1/8	2	8	4 / 20-5/8	4 / 21-5/8	4 / 27-3/8	4 / 20-1/8	4 / 30	4 / 25	1766	2218
V907A	7	42-1/4	36	2	—	21-1/8	2	8	4 / 20-5/8	4 / 28-5/8	4 / 27-3/8	4 / 23-5/8	4 / 30	4 / 25	2052	2534
V908A	8	48-1/4	42	2	—	24-1/8	2	10	4 / 20-5/8	4 / 28-5/8	4 / 27-3/8	4 / 23-5/8	4 / 35	4 / 25	2338	2846
V909A	9	54-1/4	48	2	—	27-1/8	3	10	4 / 21-1/8	4 / 29-1/8	4 / 29-7/8	4 / 23-5/8	4 / 35	4 / 25	2624	3227
V910A	10	60-1/4	54	2	—	30-1/8	3	10	4 / 21-1/8	4 / 29-1/8	4 / 29-7/8	—	4 / 35	4 / 25	2910	3559
V911A	11	66-1/4	60	2	—	33-1/8	3	12	4 / 22-5/8	4 / 29-1/8	4 / 29-7/8	—	4 / 35	4 / 25	3196	3870
V912A	12	72-1/4	66	3	30	36-1/8	4	12	4 / 22-5/8	4 / 29-1/2	4 / 29-7/8	—	4 / 35	4 / 25	3482	4197

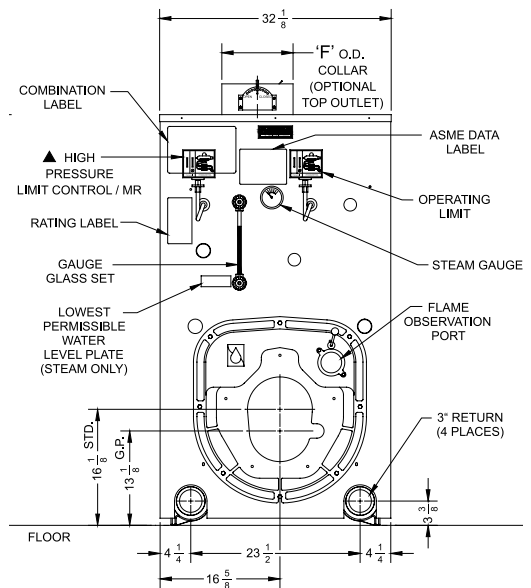
All dimensions in inches

* Burner control panel configuration may change this dimension. On JR burner, add 10" for optional panel.

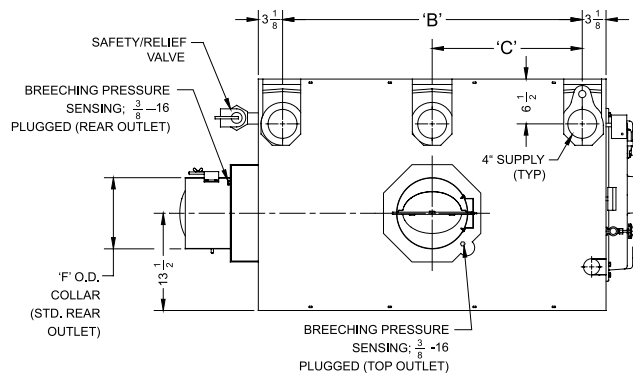
** Does not include burner mounting plate (shipped separately). Add 55 lbs. for 4" standard burner mounting plate. Add 85 lbs. for 8" extended burner mounting plate



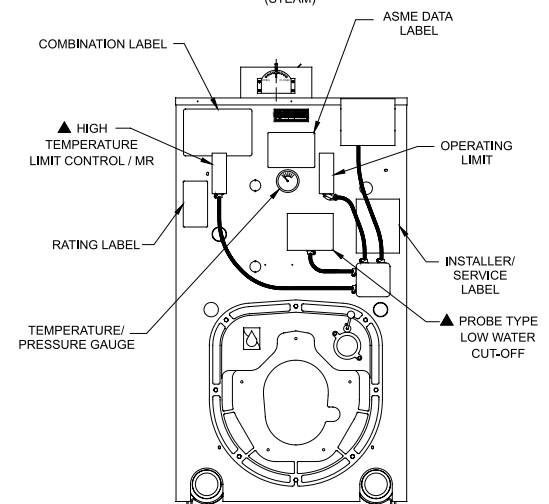
LEFT SIDE VIEW (STEAM)



▲ Not supplied as standard equipment. FRONT VIEW (STEAM)



TOP VIEW



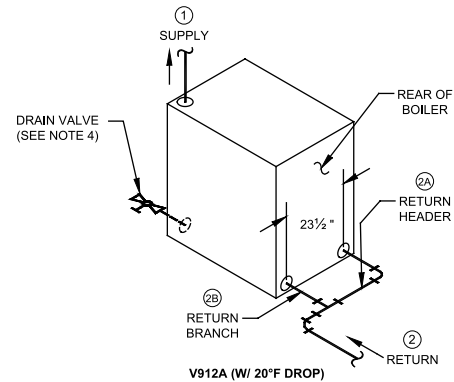
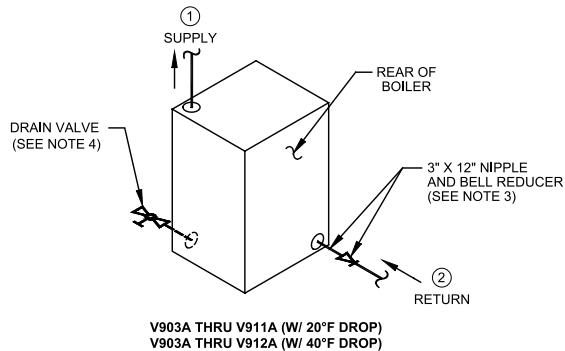
▲ Not supplied as standard equipment. FRONT VIEW (WATER)

V9 Series Piping Recommendations

Water and Steam

WATER BOILER PIPING

To be used when system return water is not less than 135° F for prolonged periods of time and system flow does not impact flow through the boiler

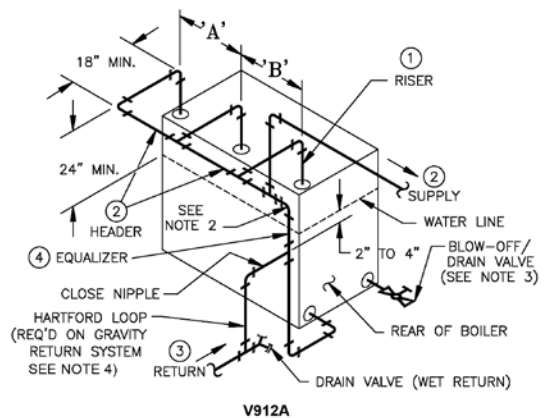
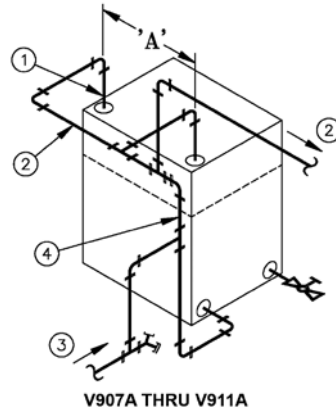
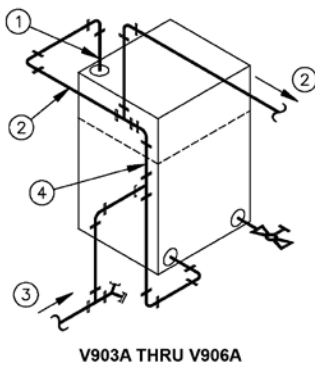


MODEL	SUPPLY PIPING SIZE (IN.) (1)		RETURN PIPING SIZE (IN.)			
			RETURN (2)		RETURN HEADER (2A)	RETURN BRANCH (QTY.) SIZE (2B)
	20°F DROP	40°F DROP	20°F DROP	40°F DROP	20°F DROP	20°F DROP
V903A	2	1-1/2	2	1-1/2	—	—
V904A	2	1-1/2	2	1-1/2	—	—
V905A	2	1-1/2	2	1-1/2	—	—
V906A	2-1/2	1-1/2	2-1/2	1-1/2	—	—
V907A	2-1/2	2	2-1/2	2	—	—
V908A	2-1/2	2	2-1/2	2	—	—
V909A	3	2	3	2	—	—
V910A	3	2-1/2	3	2-1/2	—	—
V911A	3	2-1/2	3	2-1/2	—	—
V912A	4	2-1/2	4	2-1/2	3	(2) 3

NOTES:

- All piping is schedule 40.
- Pipe sizes listed are based on a 20°F or 40°F differential (temperature drop). Select one to match application. Consult factory if boilers are used in low temperature applications or blending/mixing devices.
- When specified return piping size is less than 3", install 3" X 12" nipple and appropriate size bell reducer directly into boiler return tapping as shown.
- Drain valve — ball valve preferable, gate valve acceptable alternative (supplied by others).
- Minimum valve size per ASME code is 3/4" NPT
- For multiple water boiler piping, consult factory.

STEAM BOILER PIPING



MODEL	PIPING SIZE (IN INCHES)				RISER SPACING (INCHES)	
	RISER (Qty.) SIZE (1)	HEADER & SUPPLY (2)	RETURN (3)	EQUALIZER (4)	'A'	'B'
V903A	(1) 3	3	1-1/2	2	—	—
V904A	(1) 4	4	2	2	—	—
V905A	(1) 4	4	2	2	—	—
V906A	(1) 4	4	2-1/2	2-1/2	—	—
V907A	(2) 4	6	2-1/2	2-1/2	36	—
V908A	(2) 4	6	2-1/2	2-1/2	42	—
V909A	(2) 4	6	2-1/2	2-1/2	48	—
V910A	(2) 4	6	3	3	54	—
V911A	(2) 4	6	3	3	60	—
V912A	(3) 4	6	3	3	30	36

NOTES:

- All piping is schedule 40.
- To prevent condensate from being trapped in header, do not reduce equalizer elbow at header connection.
- Drain/blowoff valve — ball valve preferable, gate valve acceptable alternative (supplied by others).
- Minimum valve size per ASME code is 3/4" NPT 903A/905A; 1" NPT 906A/910A; 1-1/4" NPT 911A/912A.
- Increasing the valve size will improve the blowdown operation.
- In all cases, piping connection blowoff valve to boiler should be full size to the point of discharge.
- For pumped return systems, see V9A installation manual.
- For multiple steam boiler piping, consult factory.

V9 Series Burners

OIL BURNERS

BOILER MODEL	BECKETT		CARLIN		POWER FLAME		WEBSTER	
	BURNER MODEL	H.P.	BURNER MODEL	H.P.	BURNER MODEL	H.P.	BURNER MODEL	H.P.
V903A	CF500	1/3	301CRD	1/4	—	—	—	—
V904A	CF800	1/3	301CRD	1/4	C1-OS	1/3	—	—
V905A	CF800	1/3	301CRD	1/4	C1-OS	1/3	JB10-02	1/4
V906A	CF1400	1/2	702CRD	1/2	C1-OS	1/2	JB10-03	1/3
V907A	CF1400	1/2	702CRD	1/2	C1-OS	1/2	JB10-03	1/3
V908A	CF1400	1/2	702CRD	1/2	C2-OAS	3/4	JB10-03	1/3
V909A	CF2300A	3/4	801CRD	3/4	C2-OAS	3/4	JB10-05	1/2
V910A	CF2300A	3/4	801CRD	3/4	C2-OAS	3/4	JB10-05	1/2
V911A	CF2500A	2	801CRD	3/4	C2-OB	1-1/2	JB10-07	3/4
V912A	CF2500A	2	801CRD-B	1-1/2	C2-OB	1-1/2	JB10-07	3/4

Standard Burner Motor Voltage:

Beckett – CF500, CF800, CF1400, and CF2300A are 120/60/1. CF2500A is 240/60/1.

Carlin – 301CRD and 702CRD are 120/60/1. 801CRD is 240/60/1.

Power Flame – C1-OS is 120/60/1. C2-OAS and C2-OB are 240/60/1.

Webster – JB10-02, JB10-03, and JB10-05 are 120/60/1. JB10-07 is 240/60/1.

Optional Motor Voltage:

Most models have 208-240 or 480 volts/3phase available at additional cost as an option. Consult your Burnham Commercial sales representative.

GAS BURNERS*

BOILER MODEL	BECKETT			POWER FLAME* C SERIES		POWER FLAME JR SERIES			WEBSTER	
	BURNER MODEL	H.P.	MIN. GAS PRESSURE INCHES	BURNER MODEL	H.P.	BURNER MODEL	H.P.	MIN. GAS PRESSURE INCHES	BURNER MODEL	MIN. GAS PRESSURE INCHES
V903A	CG10-1S	1/3	3.3	—	—	JR15A-10	1/4	4.0	—	—
V904A	CG10-4S	1/3	3.7	C1-G-10	1/3	JR30A-10	1/3	4.2	JB1G-02	5.0
V905A	CG10-5S	1/3	4.7	C1-G-10	1/3	JR30A-12	1/3	5.9	JB1G-02	8.0
V906A	CG10-6S	1/3	5.5	C1-G-12	1/2	JR30A-12	1/3	4.3	JB1G-02	5.0
V907A	CG15-3S	1/2	5.4	C1-G-12	1/2	JR50A-15	1/3	5.4	JB1G-02	6.0
V908A	CG15-4S	1/2	6.2	C2-G-15	1/2	JR50A-15	1/3	4.4	JB1G-03	8.0
V909A	CG25-2S	3/4	4.7	C2-G-20A	3/4	JR50A-15	1/3	5.0	JB1G-05	6.0
V910A	CG25-3S	3/4	5.0	C2-G-20A	3/4	—	—	—	JB1G-05	6.0
V911A	CG25-4S	3/4	4.9	C2-G-20B	1	—	—	—	JB1G-07	7.0
V912A	CG50-2S	2	3.9	C2-G-20B	1	—	—	—	JB1G-07	9.0

Standard Motor Voltage:

Beckett – V903 through V911 120/60/1, V912 240/60/1

Power Flame C Series – C1-G-10, C1-G-12, C2-G-15 are 120/60/1. C2-G-20A and C2-G-20B are 240/60/1.

Power Flame JR Series – All burners are 120/60/1.

Webster – JB1G-02, JB1G-03 and JB1G-05 are 120/60/1. JB1G-07 is 240/60/1.

Optional Burner Motor Voltage:

Most models have 208-240 or 480 volts/3phase available at additional cost as an option. Consult your Burnham Commercial sales representative.

* For gas connection size on Gordon-Piatt, Webster and Power Flame C burners and minimum gas pressure for C burner see gas/oil burner chart.

GAS/OIL BURNERS

BOILER MODEL	POWER FLAME - C SERIES				WEBSTER**		
	BURNER MODEL	H.P.	INLET GAS CONNECTION INCHES	MIN. GAS PRESSURE INCHES	BURNER MODEL	H.P.	INLET GAS CONNECTION INCHES
V904A	C1-GO-10	1/3	1	4.4	—	—	—
V905A	C1-GO-10	1/3	1	4.4	JB1C-02	1/4	1-1/4
V906A	C1-GO-12	1/2	1	4.8	JB1C-03	1/3	1-1/4
V907A	C1-GO-12	1/2	1	5.2	JB1C-03	1/3	1-1/2
V908A	C2-GO-15	3/4	1	6.4	JB1C-05	1/2	1-1/2
V909A	C2-GO-20A	1	1-1/4	4.9	JB1C-05	1/2	1-1/2
V910A	C2-GO-20A	1	1-1/4	5.2	JB1C-05	1/2	1-1/2
V911A	C2-GO-20B	1-1/2	1-1/4	5.4	JB1C-07	3/4	2
V912A	C2-GO-20B	1-1/2	1-1/2	5.0	JB1C-10	1	2

Standard Burner Motor:

Power Flame – C1-GO-10 and C1-GO-12 are 120/60/1. C2-GO-15, C2-GO-20A and C2-GO-20B are 240/60/1.

Webster – JB1C-02, JB1C-03, and JB1C-05 are 120/60/1. JB1C-07 and JB1C-10 are 240/60/1.

Optional Burner Motor Voltage:

Most models have 208-240 or 480 volts/3phase available at additional cost as an option. Consult your Burnham Commercial sales representative.

** For minimum gas pressure requirements, see gas burner chart.

V9 Series Ratings & Equipment Listing



BOILER MODEL (1)	BOILER H.P.	GROSS OUTPUT MBH (2)	NET I=B=R RATINGS (2) (3)			BURNER INPUT		NET FIREBOX VOLUME (CU. FT)	PRESSURE IN FIREBOX (IN. WTR. COLUMN)	I=B=R VENT DIA. (IN.)
			STEAM		WATER MBH	OIL (GPH) (4)	GAS (MBH)			
			MBH	SQ. FT.						
V-903A	10.3	347	260	1083	302	3.1	447	3.2	.33	7
V-904A	14.4	483	362	1508	420	4.2	606	4.8	.38	7
V-905A	19.3	646	485	2021	562	5.6	808	6.4	.31	8
V-906A	24.1	808	606	2525	703	7.0	1010	7.9	.38	8
V-907A	28.6	959	719	2996	834	8.3	1198	9.5	.36	8
V-908A	33.2	1110	833	3471	965	9.6	1386	11.0	.35	10
V-909A	40.1	1342	1014	4225	1167	11.6	1674	12.6	.35	10
V-910A	45.6	1528	1168	4867	1329	13.2	1905	14.2	.40	10
V-911A	51.2	1714	1323	5513	1490	14.8	2136	15.7	.45	12
V-912A	56.8	1900	1474	6142	1652	16.4	2367	17.3	.49	12

1. Suffix "S" indicates steam boiler, "W" indicates water boiler. Suffix "G" indicates gas-fired, "O" indicates oil fired and "GO" indicates combination gas/oil fired.
2. Boiler ratings are based on 12.5% CO₂ on oil; 9.7% CO₂ on gas, and .10 in. water column pressure at boiler flue outlet.
3. I=B=R net ratings shown are based on piping and pick up allowances which vary from 1.333 to 1.289 for steam and 1.15 for water. Consult manufacturer for installations having unusual piping and pick up requirements, such as intermittent system operation, extensive piping systems, etc.
4. The I=B=R burner capacity in GPH is based on oil having a heat value of 140,000 BTU per gallon.

Ratings shown above apply to altitudes up to 1000 feet on oil and 2000 feet on gas. For altitudes above those indicated, the ratings should be reduced at the rate of 4% for each 1000 feet above sea level.

NOTE: Maximum allowable working pressure (MAWP):

Steam: 15 PSI

Water – USA: 80 PSI (standard relief valve provided is 50 PSI) (30 PSI and 80 PSI relief valve optional)

Water – Canada: 45 PSI (standard relief valve provided is 45 PSI) (30 PSI relief valve optional)

STANDARD EQUIPMENT

ALL BOILERS: Sections unassembled, flush insulated jacket, burner mounting plate, burner adapter plate, **rear flue outlet damper** (top outlet optional), flue canopy, rear observation port cover, target wall (V-903A), and miscellaneous plugs, bushing and fittings, L4006B (low fire hold aquastat).

STEAM TRIM: 15 PSI safety valve, L404FA pressuretrol, gauge glass assembly, steam gauge

WATER TRIM: 50 PSI safety relief valve, L4006A high limit, pressure/temperature gauge

OIL BOILERS: Flange mounted flame retention oil burner furnished with 2 stage fuel unit, primary control and dual oil valves

GAS BOILERS: Flange mounted gas burner with standard controls meeting the latest UL requirements, dual gas valves, gas-electric ignition with proven gas pilot, flame rod on JR burner, ultra violet flame detector on others, electronic programming controls and components are factory wired in a burner mounted control panel.

GAS/OIL BURNERS: Flange mounted combination gas/oil burner with standard controls meeting latest UL requirements, manually operated fuel transfer switch for dual fuel changeover, dual gas valves and oil valves, electric ignition with proven gas pilot on both fuels (direct spark ignition of oil is optional), ultra-violet flame detector, electronic programming controls and components are factory wired in a burner mounted control panel.

TANKLESS HEATER RATINGS* (Water and Steam)

* Ratings are given in gallons per minute continuous draw of water heated from 40°F to 140°F with 200°F boiler water.

BOILER MODEL	NUMBER OF V9-2 TANKLESS* HEATERS INSTALLED			
	1	2	3	4
V-903A	6.75	—	—	—
V-904A	7.5	—	—	—
V-905A	7.5	—	—	—
V-906A	7.5	15	—	—
V-907A	7.5	15	—	—
V-908A	7.5	15	—	—
V-909A	7.5	15	22.5	—
V-910A	7.5	15	22.5	—
V-911A	7.5	15	22.5	—
V-912A	7.5	15	22.5	30.0

OPTIONAL EQUIPMENT

Assembled sections; completely packaged (includes manual reset high limit and manual reset low water cutoff); packaged and fire-tested; **top outlet flue damper**; tankless heaters; side inspection tappings with brass plugs; 30 PSI and 80 PSI safety relief valves (water); combustion and hydronic controls to meet special applications including F.M., I.R.I., and ASME CSD-1.

V11 Series

Cast Iron Commercial Water or Steam Boiler



- 837 to 5733 MBH Input
- Oil, Gas, or Oil/Gas Combination
- 30, 50, or 80 PSI
- Cast Iron Sectional Design
- Water or Steam
- Top or Rear Venting
- Exclusive Optional SBC Boiler Control™
– Maximizes System Efficiency



V11 Series

Cast Iron Commercial Water or Steam Boiler

Your Commercial Heating Solution!

Available in twenty sizes with gross output ratings from 667 to 4551 MBH, the V11 Series is commonly used in schools, hospitals, and other large commercial applications where comfort and reliability are critical. The product meets the energy efficiency requirements of ASHRAE 90.1 with combustion efficiencies up to 85%.

Cast iron construction, ease of assembly, two venting options, and stringent testing methods make the V11 Series boiler by Burnham Commercial your commercial heating solution.

American-Made Cast Iron Construction—BC25-HSi

Burnham Commercial's unique BC25-HSi cast iron formula has an extremely high silicon content, making it stronger and more flexible than the iron used in competitor's boiler sections. It offers better thermal shock resistance and greater heat transfer capabilities than other cast iron products.

BC25-HSi's properties allow Burnham Commercial to maintain the highest level of quality from start to finish, and provide a product that is optimized for hydronic heating applications.

- **Manufactured with Quality**

Cast iron sections are produced at Burnham Foundry LLC in Ohio, ensuring quality and availability of boiler sections.



- **Cast Iron Nipple Difference**

V11 sections are held together using cast iron nipples, which are well known as being of the highest standard for boiler construction. Unlike gaskets used by many other boiler manufacturers, cast iron nipples are impervious to flue gases, oils, petroleum-based chemicals and other contaminants, which means fewer costly repairs and a longer lasting boiler.



Installation & Service Flexibility

The cast iron sectional design of the V11 boiler makes it easy to maneuver through doorways and into the boiler room. In addition to being shipped as loose sections, the boiler is available with factory-assembled sections or as a completely packaged and fire-tested unit.

- **Hassle-free Section Assembly**

V11 boiler sections have reinforced lugs that are used to assemble the sections with individual draw rods resulting in fast, strain-free assembly.



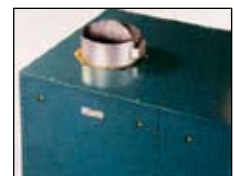
The sections can be assembled using two common tools—a 3/4" drive ratchet with a 1-1/16" deep socket and wrench. The sections are surface ground to ensure smooth surface mating. An elastic sealant and fiberglass rope are used on all section joints for a completely sealed and pressure-tight assembly.

- **Extensive Testing Methods**

Each boiler section is hydrostatically tested at 2-1/2 times the rated working pressure at the foundry. Factory-assembled sections are tested a second time at 1.5 times the rated working pressure.

- **Rear or Top Venting**

As a forced draft boiler, the V11 provides optimum draft for controlled efficiency, eliminating the need for high chimneys or induced draft fans. A unique feature of the V11 boiler is that it can be vented from the rear or the top. This enables easy chimney or sidewall venting for maximum installation flexibility. Top outlet venting saves floor space and reduces installation time and materials. A plugged tapping is provided to take flue outlet pressure readings.



Commitment to Quality

Burnham Commercial, "America's Boiler Company," has earned a reputation for quality and dependability. Built for a variety of applications, the V11 Series is right for your next job.

Top or Rear Outlet

with adjustable lock-type damper (not shown); includes plugged tapping for outlet pressure readings

Front Mounted Controls

for easy adjustment and maintenance

Burner Mounting Plate

with flame observation port

Removable Side Jacket Panels

Easy access to all cleanouts and flue surfaces

4 Burner Manufacturers

Options to best fit your needs

Individual Draw Rods

with reinforced lugs for strain free assembly

Wet Base

Side wall insulation creates improved thermal circulation

Aluminized Steel Canopy

Cast Iron Nipples

ensure the integrity of the section assembly and resist petroleum based chemicals and flue gases

Cast Iron Sections

Vertical flue design with pinned heating surface for maximum heat extraction

Rear Observation Port

Includes plugged tapping for over-fire draft readings

Optional Tankless Heater

Provides domestic hot water

Also Available...

SBC™

Integrated Boiler Control System

Burnham Commercial's SBC is a complete boiler monitoring and automation system. Available as an option, this exclusive feature was designed and developed by Burnham Commercial's engineers and is available ONLY on Burnham Commercial products.

- Designed to maximize system efficiency and minimize energy usage
- Easily connected to building management systems
- Proven control platform, used successfully for years at other Burnham companies
- Fail-safe design insures boiler operation

SBC Exclusives

- Advanced Adaptability
- Peer-To-Peer Network
- Fail-Safe System Operations
- Boiler Monitoring & Diagnostic Displays
- Modulation Rate and On/Off Modes
- Outdoor Air Temperature Reset
- Warm Weather Shutdown (WWSD)
- Domestic Hot Water Priority (DHWP)
- System Control Outputs

**The SBC Boiler Control System...
Only available
from Burnham
Commercial!**

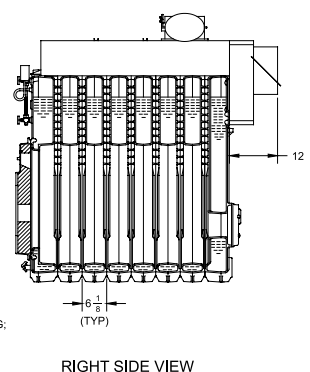
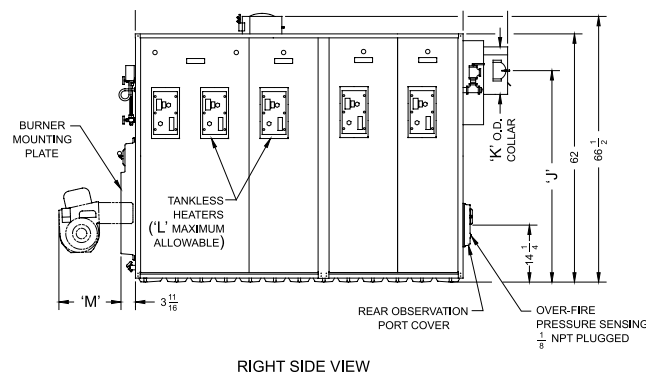
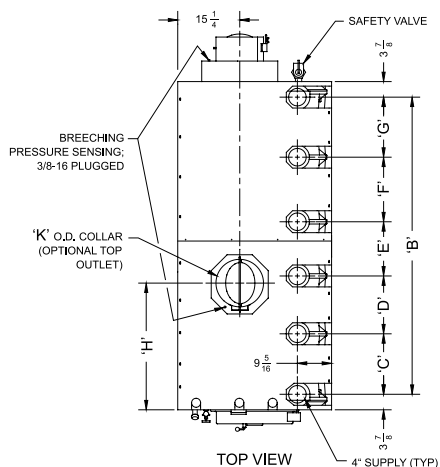
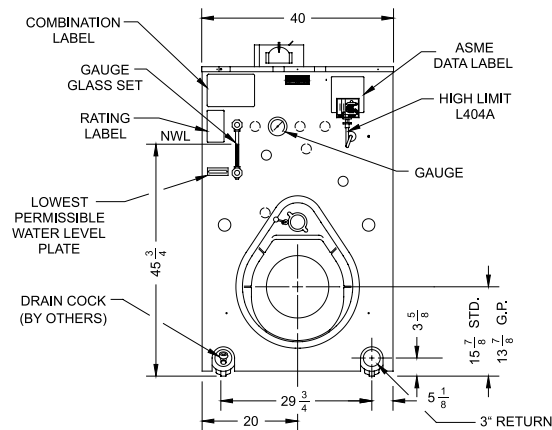
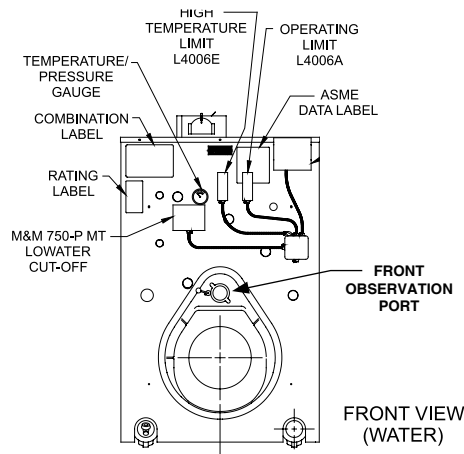


V11 Series Dimensions

BOILER MODEL	NUMBER OF SECTIONS	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'L'	BURNER DIMENSION - 'M' *						APPROX. WEIGHT OF SECTION (Assembly Only)
													BECKETT		CARLIN	POWERFLAME		WEBSTER	
													CF	CG		CR	JR**	JB	
V1104	4	26-5/8	18-7/8	—	—	—	—	—	13-13/16	55	8	1	24-3/4	21-3/4	—	30	20-1/4	25	1833
V1105	5	32-3/4	25	—	—	—	—	—	19-15/16	55	8	2	24-3/4	21-3/4	19-3/4	30	20-1/4	25	2226
V1106	6	38-7/8	31-1/8	31-1/8	—	—	—	—	26-1/16	55	8	2	24-3/4	28-3/4	19-3/4	35	23-3/4	25	2618
V1107	7	45	37-1/4	37-1/4	—	—	—	—	32-3/16	54	10	3	24-1/4	29-1/4	20-1/2	35	23-3/4	25	3010
V1108	8	51-1/8	43-3/8	43-3/8	—	—	—	—	38-5/16	54	10	3	24-1/4	29-1/4	20-1/2	35	23-3/4	25	3403
V1109	9	57-1/4	49-1/2	49-1/2	—	—	—	—	44-7/16	54	10	4	24-1/4	29-1/4	20-1/2	35	—	25	3795
V1110	10	63-3/8	55-5/8	24-3/4	30-7/8	—	—	—	50-9/16	53	12	4	24-1/4	29-1/4	25-5/8	35	—	25	4188
V1111	11	69-1/2	61-3/4	37	24-3/4	—	—	—	56-11/16	53	12	4	24-1/4	29-5/8	25-5/8	40	—	29	4580
V1112	12	75-5/8	67-7/8	37	30-7/8	—	—	—	56-5/8	53	12	5	25-3/4	29-5/8	25-5/8	40	—	29	4972
V1113	13	81-3/4	74	37	37	—	—	—	53-5/16	53	12	5	25-3/4	29-5/8	26-1/8	40	—	29	5365
V1114	14	87-7/8	80-1/8	24-3/4	24-1/2	30-7/8	—	—	53-5/16	52	14	5	27	29-5/8	26-1/8	40	—	29	5757
V1115	15	94	86-1/4	24-3/4	24-1/2	37	—	—	53-5/16	52	14	6	27	29-5/8	26-1/8	40	—	29	6150
V1116	16	100-1/8	92-3/8	30-7/8	36-3/4	24-3/4	—	—	53-5/16	52	14	6	26	29-5/8	26-1/8	40	—	29	6542
V1117	17	106-1/4	98-1/2	30-7/8	36-3/4	30-7/8	—	—	53-5/16	52	14	6	—	29-5/8	26-1/8	40	—	29	6934
V1118	18	112-3/8	104-5/8	30-7/8	24-1/2	24-1/2	24-3/4	—	53-5/16	51	16	7	—	29-5/8	—	40	—	29	7327
V1119	19	118-1/2	110-3/4	30-7/8	24-1/2	24-1/2	30-7/8	—	53-5/16	51	16	7	—	29-5/8	—	40	—	29	7719
V1120	20	124-5/8	116-7/8	30-7/8	24-1/2	36-3/4	24-3/4	—	53-5/16	51	16	8	—	—	—	40	—	29	8112
V1121	21	130-3/4	123	30-7/8	24-1/2	36-3/4	30-7/8	—	53-5/16	51	16	8	—	—	—	40	—	29	8504
V1122	22	136-7/8	129-1/8	30-7/8	24-1/2	24-1/2	24-1/2	24-3/4	53-5/16	50	18	9	—	—	—	46	—	29	8896
V1123	23	143	135-1/4	30-7/8	24-1/2	24-1/2	24-1/2	30-7/8	53-5/16	50	18	9	—	—	—	46	—	29	9289

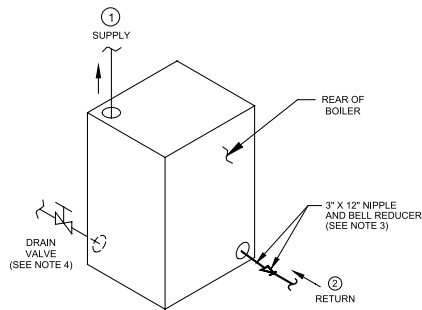
All dimensions in inches

* Burner control panel configuration may change this dimension

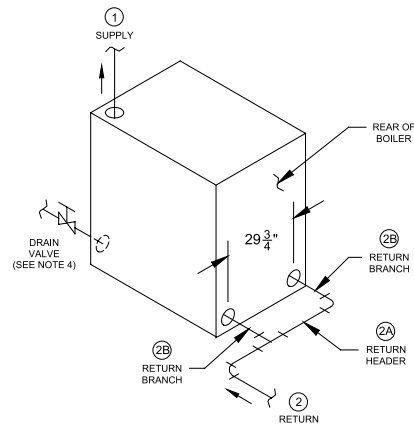


V11 Series Piping Recommendations

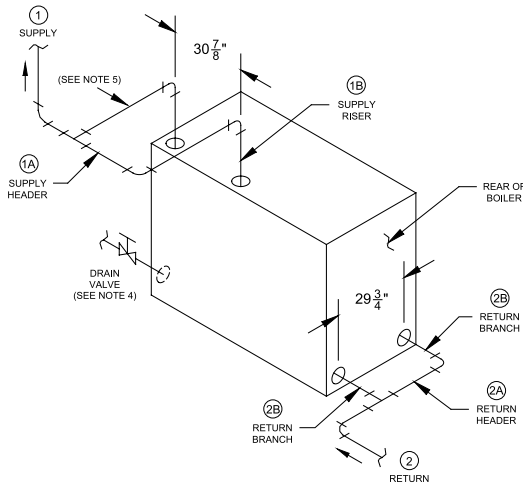
Water Boiler



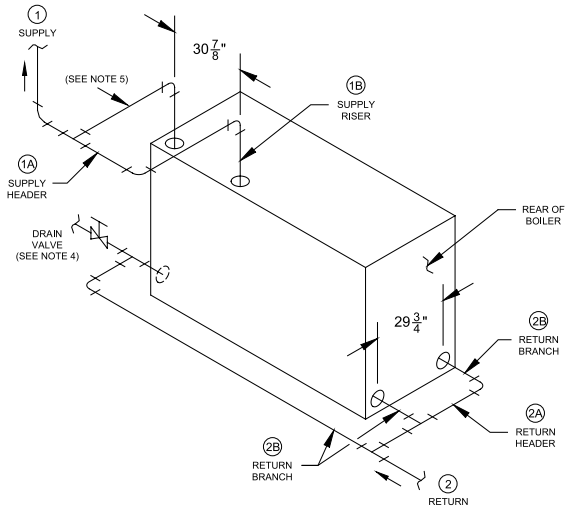
V1104 THRU V1108 (W/20°F DROP)
V1104 THRU V1117 (W/40°F DROP)



V1109 THRU V1115 (W/20°F DROP)
V1118 THRU V1123 (W/40°F DROP)



V1116 AND V1117 (W/20°F DROP)



V1118 THRU V1123 (W/20°F DROP)

Pipe Sizing and Notes

NOTES:

1. All piping is schedule 40.
2. Pipe size listed are based on a 20° F or 40° F differential (temperature drop). Select one to match application.
3. When specified return piping size is less than 3", install 3" x 12" nipple and appropriate size bell reducer directly into boiler return tapping as shown.
4. Drain valve - ball valve preferable, gate valve acceptable alternative (supplied by others).
Minimum valve size per ASME code is 3/4" NPT.
5. Swing joints on two riser systems may be piped over the top of the boiler if space is limited.
6. Boilers require protection from flue gas condensation and thermal shock when operating below 135°F return water temperatures

BOILER MODEL	SUPPLY PIPING SIZE IN INCHES						RETURN PIPING SIZE IN INCHES					
	(1) SUPPLY		(1A) SUPPLY HEADER		(1B) SUPPLY RISER (QTY.) SIZE		(2) RETURN		(2A) RETURN HEADER		(2B) RETURN BRANCH (QTY.) SIZE	
	20° F DROP	40° F DROP	20° F DROP	40° F DROP	20° F DROP	40° F DROP	20° F DROP	40° F DROP	20° F DROP	40° F DROP	20° F DROP	40° F DROP
V1104	2-1/2	2	—	—	—	—	2-1/2	2	—	—	—	—
V1105	2-1/2	2	—	—	—	—	2-1/2	2	—	—	—	—
V1106	2-1/2	2	—	—	—	—	2-1/2	2	—	—	—	—
V1107	3	2	—	—	—	—	3	2	—	—	—	—
V1108	3	2	—	—	—	—	3	2	—	—	—	—
V1109	4	2-1/2	—	—	—	—	4	2-1/2	3	—	(2) 3	—
V1110	4	2-1/2	—	—	—	—	4	2-1/2	3	—	(2) 3	—
V1111	4	2-1/2	—	—	—	—	4	2-1/2	3	—	(2) 3	—
V1112	4	3	—	—	—	—	4	3	3	—	(2) 3	—
V1113	4	3	—	—	—	—	4	3	3	—	(2) 3	—
V1114	4	3	—	—	—	—	4	3	3	—	(2) 3	—
V1115	4	3	—	—	—	—	4	3	3	—	(2) 3	—
V1116	5	3	3	—	(2) 3	—	5	3	3	—	(2) 3	—
V1117	5	3	3	—	(2) 3	—	5	3	3	—	(2) 3	—
V1118	5	4	4	—	(2) 4	—	5	4	4	3	(3) 3	(2) 3
V1119	5	4	4	—	(2) 4	—	5	4	4	3	(3) 3	(2) 3
V1120	5	4	4	—	(2) 4	—	5	4	4	3	(3) 3	(2) 3
V1121	5	4	4	—	(2) 4	—	5	4	5	3	(3) 3	(2) 3
V1122	5	4	4	—	(2) 4	—	5	4	5	3	(3) 3	(2) 3
V1123	5	4	4	—	(2) 4	—	5	4	5	3	(3) 3	(2) 3

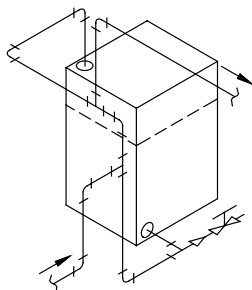
V11 Series Piping Recommendations

Steam Boiler

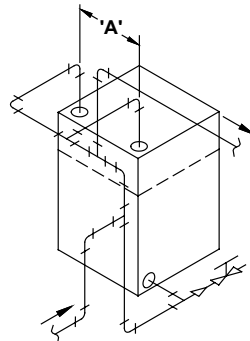
BOILER MODEL	PIPING SIZE IN INCHES				RISER SPACING IN INCHES				
	(1) RISER (QTY.) SIZE	(2) RETURN	(3) HEADER	(4) EQUALIZER	'A'	'B'	'C'	'D'	'E'
V1104	(1) 4	2	4	2-1/2	—	—	—	—	—
V1105	(1) 4	2	4	2-1/2	—	—	—	—	—
V1106	(2) 4	2-1/2	6	2-1/2	31-1/8	—	—	—	—
V1107	(2) 4	2-1/2	6	2-1/2	37-1/4	—	—	—	—
V1108	(2) 4	2-1/2	6	2-1/2	43-3/8	—	—	—	—
V1109	(2) 4	2-1/2	6	2-1/2	49-1/2	—	—	—	—
V1110	(3) 4	2-1/2	6	2-1/2	24-3/4	30-7/8	—	—	—
V1111	(3) 4	3	8	4	37	24-3/4	—	—	—
V1112	(3) 4	3	8	4	37	30-7/8	—	—	—
V1113	(3) 4	3	8	4	37	37	—	—	—
V1114	(4) 4	3	8	4	24-3/4	24-1/2	30-7/8	—	—
V1115	(4) 4	3	8	4	24-3/4	24-1/2	37	—	—
V1116	(4) 4	3	8	4	30-7/8	36-3/4	24-3/4	—	—
V1117	(4) 4	3	8	4	30-7/8	36-3/4	30-7/8	—	—
V1118	(5) 4	3	8	4	30-7/8	24-1/2	24-1/2	24-3/4	—
V1119	(5) 4	3	10	4	30-7/8	24-1/2	24-1/2	30-7/8	—
V1120	(5) 4	3	10	4	30-7/8	24-1/2	36-3/4	24-3/4	—
V1121	(5) 4	3	10	4	30-7/8	24-1/2	36-3/4	30-7/8	—
V1122	(6) 4	3	10	4	30-7/8	24-1/2	24-1/2	24-1/2	24-3/4
V1123	(6) 4	3	10	4	30-7/8	24-1/2	24-1/2	24-1/2	30-7/8

NOTES:

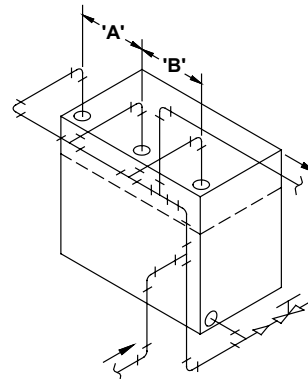
- All piping is schedule 40.
- To prevent condensate from being trapped in header, do not reduce equalizer elbow at header connection.
- Drain/blowoff valve — ball valve preferable, gate valve acceptable alternative (supplied by others).
 - Minimum valve size per ASME code is 1" NPT (V1104-1106), 1-1/4" NPT (V1107-1112), 1-1/2" NPT (V1113-1123).
 - Increasing the valve size will improve the blowdown operation
 - In all cases, piping connecting blowoff valve to boiler shall be full size to the point of discharge.
- Header piping may be run over the top of boiler if space does not allow for piping arrangement shown. However, increased service requirements will result.
- Supply from boiler header must be connected between the first boiler riser and the header drip (or hartford loop). Do not connect supply between risers or opposite end of boiler header.
- For pumped return systems, see V11 installation manual.



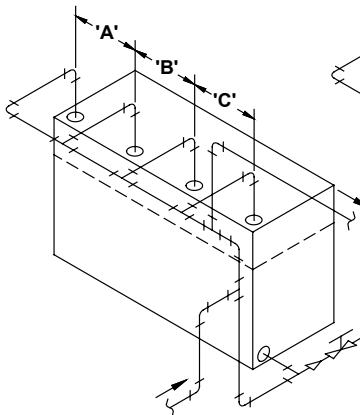
V1104 AND V1105



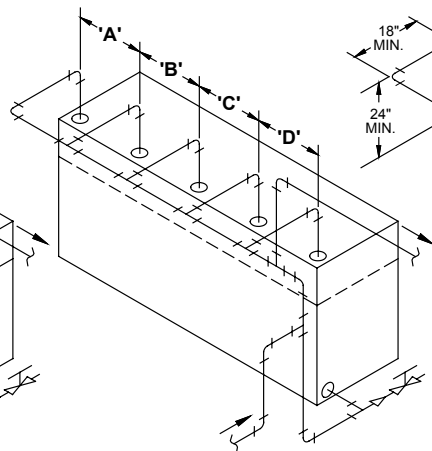
V1106 THRU V1109



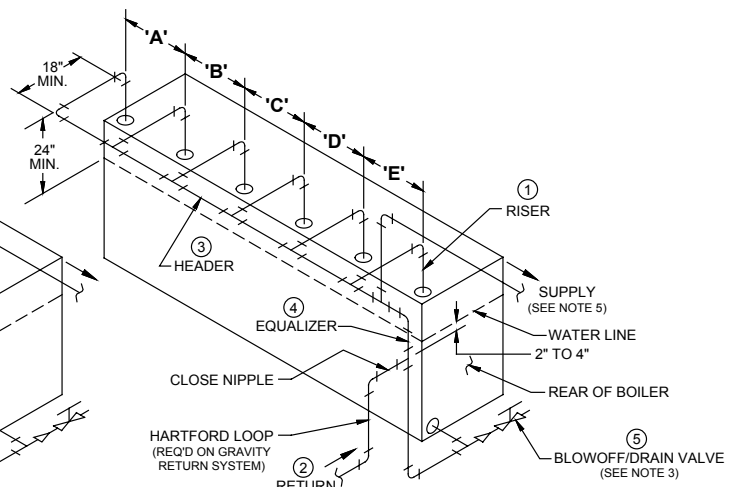
V1110 THRU V1113



V1114 THRU V1117



V1118 THRU V1121



V1122 AND V1123

V11 Series Burner Schedule

OIL BURNERS

BOILER NUMBER	BECKETT		CARLIN		POWER FLAME		WEBSTER	
	BURNER MODEL	H.P.	BURNER MODEL	H.P.	BURNER MODEL	H.P.	BURNER MODEL	H.P.
V1104	CF1400	1/2	—	—	CR1-OS	1/2	JB10-03	1/3
V1105	CF1400	1/2	702CRD	1/2	CR1-OS	1/2	JB10-03	1/3
V1106	CF1400	1/2	702CRD	1/2	CR2-OAS	3/4	JB10-03	1/3
V1107	CF2300	3/4	801CRD	3/4	CR2-OAS	3/4	JB10-05	1/2
V1108	CF2300	3/4	801CRD	3/4	CR2-OAS	3/4	JB10-05	1/2
V1109	CF2300	3/4	801CRD	3/4	CR2-OAS	3/4	JB10-07	3/4
V1110	CF2300	3/4	1050FFD	1	CR2-OAS	1-1/2	JB10-07	3/4
V1111	CF2300	3/4	1050FFD	1	CR3-O	2	JB20-10	1
V1112	CF2500	2	1050FFD	1-1/2	CR3-O	2	JB20-10	1
V1113	CF2500	2	1050FFD	1-1/2	CR3-O	2	JB20-10	1
V1114	CF3500	2	1150FFD	1-1/2	CR3-O	2	JB20-10	1
V1115	CF3500	2	1150FFD	1-1/2	CR3-O	2	JB20-10	1
V1116	CF3500	2	1150FFD	1-1/2	CR3-O	3	JB20-15	1-1/2
V1117	—	—	1150FFD	1-1/2	CR3-O	3	JB20-30	3
V1118	—	—	—	—	CR3-OB	3	JB20-30	3
V1119	—	—	—	—	CR3-OB	3	JB20-30	3
V1120	—	—	—	—	CR3-OB	3	JB20-30	3
V1121	—	—	—	—	CR3-OB	3	JB20-50	5
V1122	—	—	—	—	CR4-OA	5	JB20-50	5
V1123	—	—	—	—	CR4-OA	5	JB20-50	5

STANDARD BURNER MOTOR VOLTAGE: Beckett – CF1400, and CF2300 are 120/60/1. CF2500 and CF3500 are 240/60/3. Carlin – All sizes 240/60/1. Power Flame – CR1-OS is 120/60/1. CR2-OAS is 240/60/1. All others are 240/60/3. Webster – JB10-03, JB10-05 and JB10-07 are 120/60/1. JB20-10 is 240/60/1. All others are 240/60/3.

GAS BURNERS*

BOILER NUMBER	BECKETT			POWER FLAME - 'CR'†		POWER FLAME - 'JR'†		WEBSTER		
	BURNER MODEL	H.P.	MIN. GAS PRESS. (IN.)	BURNER MODEL	H.P.	BURNER MODEL	H.P.	BURNER MODEL	H.P.	MIN. GAS PRESS. (IN.)
V1104	CG10.6S	1/3	4.6	CR1-G-12	1/3	JR30A-10	1/3	JB1G-03	1/3	6
V1105	CG10.6S	1/3	6.6	CR1-G-12	1/2	JR30A-12	1/3	JB1G-03	1/3	4
V1106	CG15.4S	1/2	6.2	CR2-G-15	1/2	JR50A-15	1/3	JB1G-03	1/3	6
V1107	CG25.2S	3/4	5.2	CR2-G-15	1/2	JR50A-15	1/2	JB1G-05	1/2	5
V1108	CG25.3S	3/4	5.0	CR2-G-15	1/2	JR50A-15	1/2	JB1G-05	1/2	5
V1109	CG25.4S	3/4	5.2	CR2-G-15	1/2	—	—	JB1G-07	3/4	8
V1110	CG25.5S	3/4	5.2	CR2-G-20A	1	—	—	JB1G-07	3/4	8
V1111	CG50.2S	2	5.7	CR3-G-20	1-1/2	—	—	JB2G-10	1	8
V1112	CG50.3S	2	4.3	CR3-G-20	1-1/2	—	—	JB2G-10	1	6
V1113	CG50.3S	2	5.7	CR3-G-20	1-1/2	—	—	JB2G-10	1	7
V1114	CG50.4S	2	5.7	CR3-G-20	1-1/2	—	—	JB2G-15	1-1/2	8
V1115	CG50.5S	2	5.0	CR3-G-20	1-1/2	—	—	JB2G-30	3	8
V1116	CG50.5S	2	5.3	CR3-G-25	3	—	—	JB2G-30	3	8
V1117	CG50.5S	2	6.1	CR3-G-25	3	—	—	JB2G-30	3	9
V1118	CG50.5S	2	6.9	CR3-G-25B	3	—	—	JB2G-30	3	10
V1119	CG50.5S	2	7.3	CR3-G-25B	3	—	—	JB2G-30	3	11
V1120	—	—	—	CR3-G-25B	3	—	—	JB2G-30	3	12
V1121	—	—	—	CR3-G-25B	3	—	—	JB2G-50	5	14
V1122	—	—	—	CR4-G-25	3	—	—	JB2G-50	5	15
V1123	—	—	—	CR4-G-25	3	—	—	JB2G-50	5	16

STANDARD BURNER MOTOR VOLTAGE: Power Flame C Series—CR1-G-12 and CR2-G-15 are 120/60/1. CR2-G-20A is 240/60/1. All others are 240/60/3. Power Flame JR Series – All burners are 120/60/1. Webster—JB1G-03, JB1G-05 and JB1G-07 are 120/60/1. JB2G-10 is 240/60/1. All others are 240/60/3.

* For inlet gas connection size, see Gas/Oil Burner Chart † For minimum gas pressure requirements, see Gas/Oil Burner Chart.

GAS/OIL BURNERS

BOILER NUMBER	POWER FLAME - 'CR' SERIES				WEBSTER			
	BURNER MODEL	H.P.	INLET GAS CONNECTION (IN.)	MIN. GAS PRESS. (IN.)	BURNER MODEL	H.P.	INLET GAS CONNECTION (IN.)	MIN. GAS PRESS. (IN.)
V1104	CR1-GO-12	1/2	1	4.7	JB1C-03	1/3	1	7.0
V1105	CR1-GO-12	1/2	1	4.8	JB1C-03	1/3	1-1/4	4.9
V1106	CR2-GO-15	3/4	1	5.4	JB1C-03	1/3	1-1/4	7.0
V1107	CR2-GO-15	3/4	1	6.4	JB1C-05	1/2	1-1/4	6.2
V1108	CR2-GO-15	3/4	1	7.5	JB1C-05	1/2	1-1/2	6.9
V1109	CR2-GO-15	3/4	1-1/4	6.4	JB1C-07	3/4	1-1/2	7.0
V1110	CR2-GO-20A	1-1/2	1-1/4	5.8	JB1C-07	3/4	1-1/2	7.0
V1111	CR3-GO-20	2	2	5.8	JB2C-10	1	2	6.3
V1112	CR3-GO-20	2	1-1/2	6.0	JB2C-10	1	2	5.6
V1113	CR3-GO-20	2	1-1/2	6.8	JB2C-10	1	2	6.3
V1114	CR3-GO-20	2	1-1/2	7.4	JB2C-10	1	2	7.0
V1115	CR3-GO-20	2	1-1/2	7.3	JB2C-10	1	2	6.8
V1116	CR3-GO-25	3	2	6.6	JB2C-15	1-1/2	2	7.0
V1117	CR3-GO-25	3	2	7.1	JB2C-30	3	2	7.3
V1118	CR3-GO-25B	3	2	7.7	JB2C-30	3	2-1/2	8.1
V1119	CR3-GO-25B	3	2-1/2	6.5	JB2C-30	3	2-1/2	9.2
V1120	CR3-GO-25B	3	2-1/2	7.0	JB2C-30	3	2-1/2	10.0
V1121	CR3-GO-25B	3	2-1/2	7.0	JB2C-50	5	2-1/2	11.0
V1122	CR4-GO-25	5	2-1/2	6.3	JB2C-50	5	2-1/2	12.4
V1123	CR4-GO-25	5	2-1/2	6.9	JB2C-50	5	2-1/2	13.1

STANDARD BURNER MOTOR VOLTAGE: Power Flame - CR1-GO-12 is 120/60/1. CR2-GO-15 and CR2-GO-20A are 240/60/1. All others are 240/60/3. Webster—JB1C-03, JB1C-05, JB1C-07 are 120/60/1. JB2C-10 is 240/60/1. All others are 240/60/3.

**For minimum gas pressure requirements, see Gas Burner Chart. NOTES: 1. The minimum gas pressures shown are for standard UL burners with the standard firing sequence. IRI, FM and CSD-1 requirements may result in different pressures and prices.

Specifications

V11 RATINGS



BOILER MODEL (1)	BOILER H.P.	GROSS OUTPUT MBH (2)	I=B=R NET RATING (3)			BURNER INPUT		NET FIREBOX VOLUME (IN. WTR. COLUMN)	PRESSURE IN FIREBOX (IN. WTR. COLUMN)	I=B=R VENT DIA. (IN.)	APPROX. SHIPPING AND LIFTING WEIGHT (LBS.)
			STEAM		WATER MBH	OIL GPH (4)	GAS MBH				
			MBH	SQ. FT.							
V1104	19.9	667	500	2083	580	5.8	837	7.9	.35	8	2105
V1105	25.6	857	643	2679	745	7.4	1068	10.6	.36	8	2510
V1106	31.9	1069	802	3342	930	9.2	1328	13.2	.37	8	2920
V1107	38.3	1281	963	4013	1114	11.0	1588	15.9	.42	10	3325
V1108	45.3	1517	1159	4829	1319	13.0	1876	18.5	.42	10	3733
V1109	51.7	1729	1335	5563	1503	14.8	2136	21.1	.39	10	4147
V1110	58.0	1941	1507	6279	1688	16.6	2396	23.8	.42	12	4557
V1111	64.3	2154	1672	6967	1873	18.4	2656	26.5	.40	12	4964
V1112	69.7	2334	1812	7550	2030	20.0	2887	29.1	.42	12	5374
V1113	74.8	2503	1943	8096	2177	21.5	3103	31.8	.40	12	5771
V1114	81.6	2730	2120	8833	2374	23.5	3392	34.4	.38	14	6184
V1115	88.3	2957	2296	9567	2571	25.5	3680	37.1	.36	14	6601
V1116	93.4	3129	2427	10113	2718	27.0	3897	39.7	.38	14	7008
V1117	100.2	3353	2603	10846	2916	29.0	4186	42.4	.41	14	7417
V1118	106.9	3580	2780	11583	3113	31.0	4474	45.0	.39	16	7823
V1119	111.7	3739	2903	12096	3251	32.5	4691	47.7	.38	16	8231
V1120	118.2	3957	3072	12800	3441	34.5	4979	50.3	.38	16	8638
V1121	124.7	4174	3241	13504	3630	36.5	5268	53.0	.40	16	9053
V1122	129.5	4334	3365	14021	3769	38.0	5485	55.6	.41	18	9456
V1123	136.0	4551	3533	14721	3957	40.0	5733	58.3	.43	18	9865

1. Suffix "S" indicates steam boiler, "W" indicates water boiler. Suffix "G" indicates gas-fired, "O" indicates oil fired and "GO" indicates combination gas/oil fired.
2. Boiler ratings are based on 13% CO₂ on oil; 10.0% CO₂ on gas, and + .10 in. water column pressure at boiler flue outlet.
3. I=B=R net ratings shown are based on piping and pick up allowances which vary from 1.333 to 1.288 for steam and 1.15 for water. Consult manufacturer for installations having unusual piping and pick up requirements, such as intermittent system operation, extensive piping systems, etc.
4. The I=B=R burner capacity in GPH is based on oil having a heat value of 140,000 BTU per gallon.

Ratings shown above apply to altitudes up to 1000 feet for oil and 2000 feet for gas. For altitudes above those indicated, the ratings should be reduced at the rate of 4% for each 1000 feet above sea level.

NOTE: Maximum allowable working pressure (MAWP):

Steam: 15 PSI

Water – USA: 80 PSI (Standard relief valve provided is 50 PSI) (80 PSI/30 PSI Optional)

Water – Canada: 50 PSI (Standard relief valve provided is 50 PSI) (30 PSI Optional)

STANDARD EQUIPMENT

ALL BOILERS: Sections unassembled, flush insulated jacket, burner mounting plate, rear observation port cover, fire wall plates, target wall (V1104-1106 only), rear flue outlet damper (top outlet optional), flue canopy, trim, and miscellaneous plugs, bushing and fittings

STEAM TRIM: 15 PSI safety valve, L404F pressuretrol, gauge glass assembly, steam gauge

WATER TRIM: 50 PSI safety relief valve, L4006A high limit, pressure temperature gauge

OIL BOILERS: Flange mounted flame retention oil burner furnished with 2 stage fuel unit, primary control and dual oil valves

GAS BOILERS: Flange mounted gas burner with standard controls meeting the latest UL requirements, dual gas valves, gas-electric ignition with proven gas pilot, flame rod on JR burner, ultra violet flame detector on others, electronic programming controls and components are factory wired in a burner mounted control panel (except JR - panel available as an option)

GAS/OIL BURNERS: Flange mounted combination gas/oil burner with standard controls meeting latest UL requirements, manually operated fuel transfer switch for dual fuel changeover, dual gas valves and oil valves, electric ignition with proven gas pilot on both fuels (direct spark ignition of oil is optional), ultra-violet flame detector, electronic programming controls and components are factory wired in a burner mounted control panel

OPTIONAL EQUIPMENT

Assembled sections; completely packaged (includes manual reset high limit and manual reset low water cutoff); packaged and fire-tested; top outlet flue damper; tankless heaters; side inspection tapings with brass plugs; pressure relief door; 30 PSI and 80 PSI safety relief valves; combustion and hydronic controls to meet special applications including F.M., I.R.I., and ASME CSD-1.



Burnham Commercial - Lancaster, PA
Phone: 1-877-567-4328
www.burnhamcommercial.com

FDTM Series

Commercial Hydronic Heat
Pressure-Fired Steel Boiler
Oil, Gas or Combination Hot Water Heating



■ Heating Capacities
262 to 1617 MBH Output



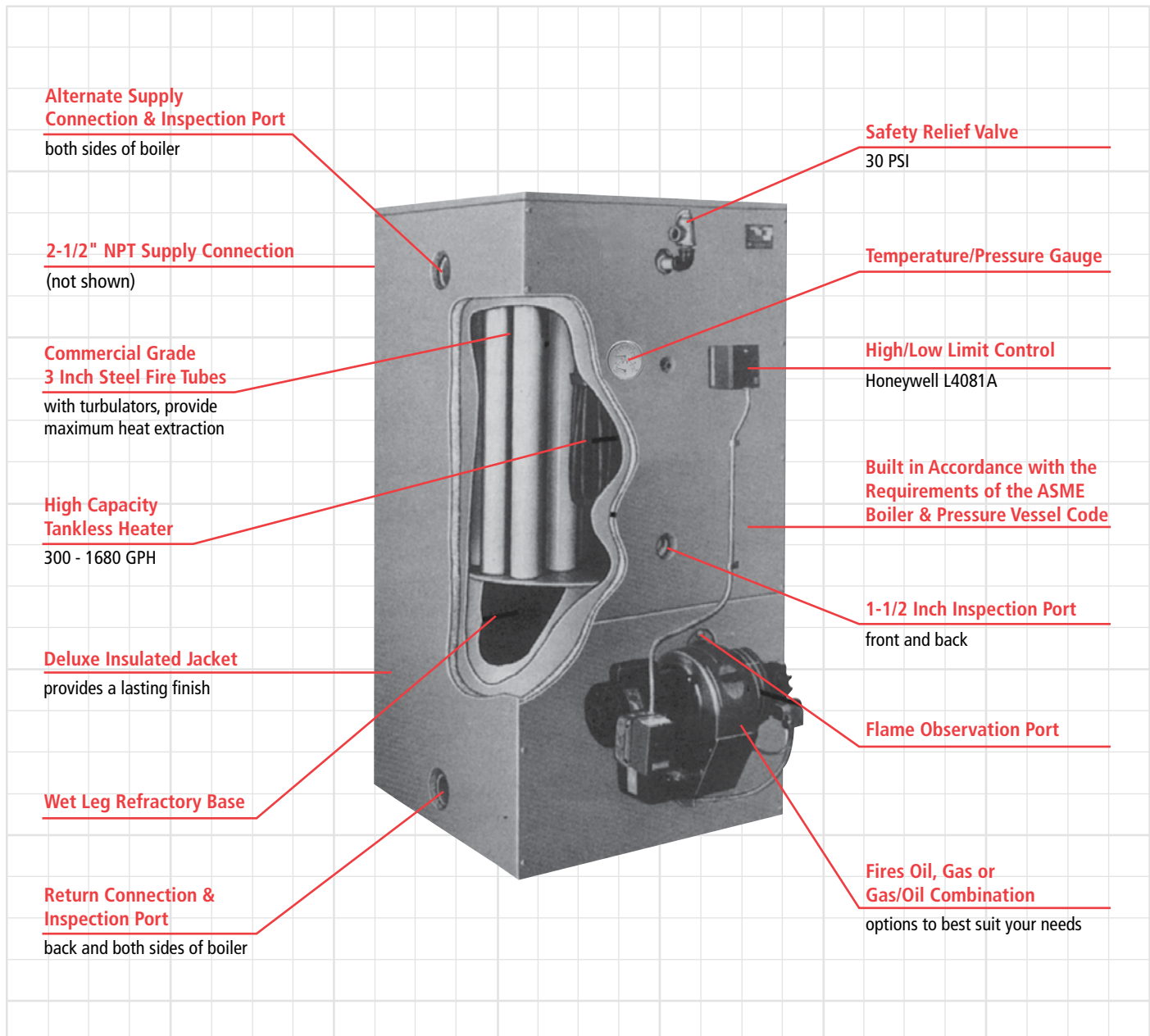
FD Series - Steel Firetube, Hot Water Boiler

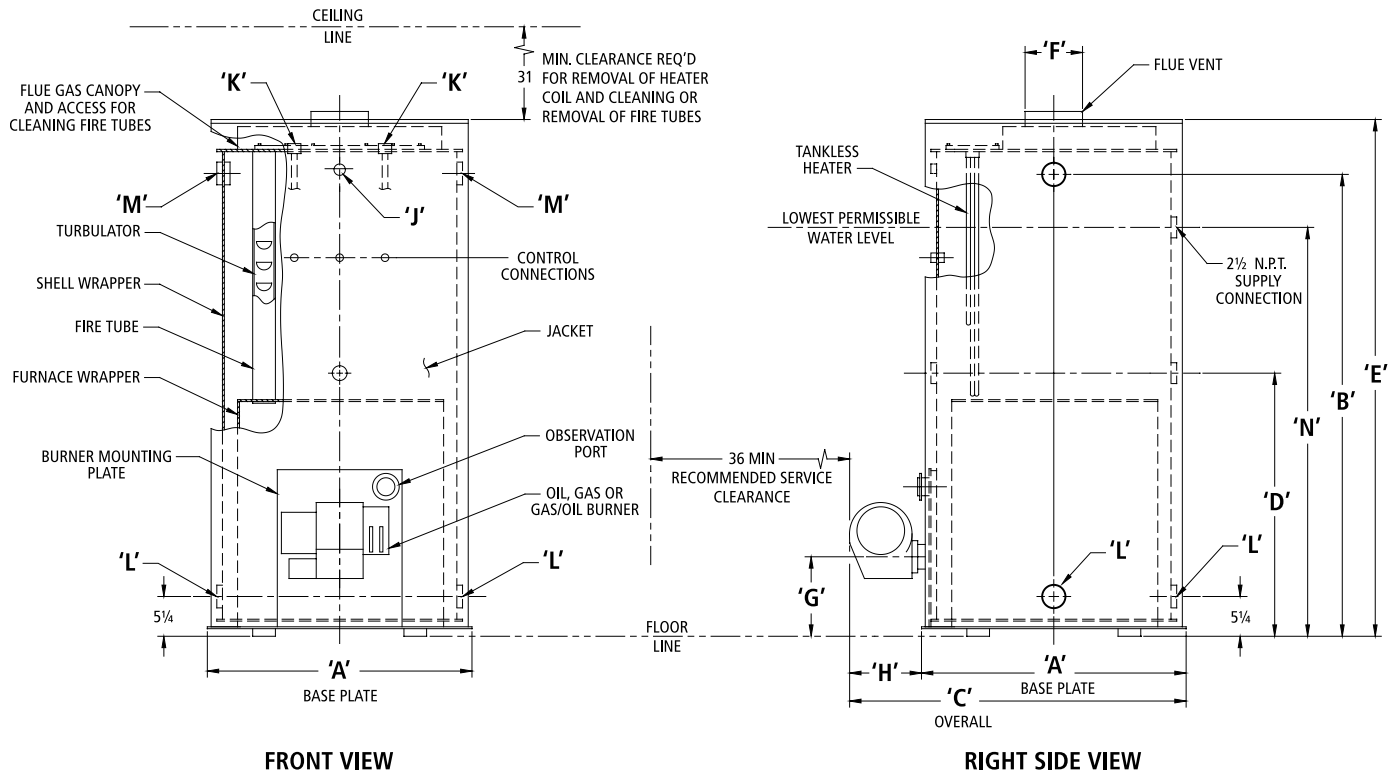
Maximum Allowable Working Pressure (MAWP): 30 PSI-Water

Versatility at Its Best

FD Series boilers are available with oil, gas or gas/oil burners. As a forced draft boiler, the FD Series eliminates the need for external draft devices, such as a high chimney or mechanical draft equipment. The vertical design of the FD Series provides a smaller footprint per gross output than conventional boilers of comparable ratings. The FD water boiler is rated for 30 PSI maximum allowable working pressure, and is available in eleven sizes from 262 to 1617 MBH output.

A popular feature of the FD is its ability to satisfy space heating as well as domestic hot water requirements for hotels, motels or apartment buildings. Tankless coil ratings of 300 to 1680 gallons per hour also make the FD ideal for use as an indirect hot water supply boiler for spas, car washes, laundries, commercial swimming pools, and restaurants. Ready for a variety of applications Burnham Commercial's FD Series water boiler is right for your next job.





Dimensions (in inches)

BOILER MODEL NUMBER		FD-7	FD-9	FD-10	FD-12	FD-14	FD-15	FD-19	FD-24	FD-30	FD-38	FD-45
'A' - Boiler Width/Length		28	28	32	32	35	35	35	38	44-1/2	48	48
'B' - Inspection & Alternate Supply Connection Height		49-7/8	55-7/8	56	56	61	61	61	61-1/4	65-1/8	71-1/4	71-1/4
'C' - Boiler Length (including burner)	Oil	36-3/4	36-3/4	41	41	44-1/4	44-1/4	55-1/4	58-1/4	66-1/4	68-1/2	68-1/2
	Gas	47-1/4	47-1/4	51-1/2	51-1/2	54-3/4	54-3/4	54-3/4	58	68	71-1/2	71-1/2
	Gas/Oil	57	57	61-1/2	61-1/2	64-3/4	64-3/4	64-3/4	68	74-1/2	82-1/2	82-1/2
'D' - 1-1/2 N.P.T. Inspection Connection Height (front/rear)		31-1/2	31-1/2	28-1/2	28-1/2	34-3/4	34-3/4	34-3/4	33-3/4	37-5/8	43-3/4	43-3/4
'E' - Boiler Height (top of jacket)		57-1/4	63-1/4	63-1/4	63-1/4	68-1/4	68-1/4	68-1/4	69-3/4	73-3/4	80	80
'F' - Flue Vent Diameter		8	8	8	8	8	8	8	9	10	10	12
'G' - Burner Center Line		12-1/4	12-1/4	12-1/4	12-1/4	12-1/4	12-1/4	12-1/4	12-1/4	12-1/4	17	17
'H' - Burner Extension	Oil	8-3/4	8-3/4	9	9	9-1/4	9-1/4	20-1/4	20-1/4	21-3/4	20-1/2	20-1/2
	Gas	19-1/4	19-1/4	19-1/2	19-1/2	19-3/4	19-3/4	19-3/4	20	23-1/2	23-1/2	23-1/2
	Gas/Oil	29	29	29-1/2	29-1/2	29-3/4	29-3/4	29-3/4	30	30	34-1/2	34-1/2
'J' - Safety Relief Valve Connection (F.P.T.)		3/4	3/4	3/4	3/4	1	1	1	1	1	1-1/4	1-1/4
'K' - Tankless Coil Connection - Pipe Size (FD-7/10 F.P.T.) (FD-12/45 M.P.T.)		3/4	3/4	3/4	1-1/4	1-1/4	1-1/4	2	2	2	2	2
'L' - Return & Inspection Connection Size (F.P.T.)		2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	3	3	3	3
'M' - Inspection & Alternate Supply Connection Size (F.P.T.)		2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	3	3	3	3
'N' - Supply Connection Height		42-7/8	48-7/8	49	49	54	54	54	54-1/4	58-1/8	64-1/4	64-1/4

Specifications



FD SERIES RATINGS

BOILER MODEL	GROSS OUTPUT (MBH)	BOILER H.P.	NET RATING WATER (MBH) (1)	BURNER INPUT		MAXIMUM TANKLESS HEATER CAPACITY GPM (3)	WATER CONTENT OF BOILER (GAL.)	FURNACE VOLUME (CU. FT.)	APPROX. BOILER AND BURNER SHIPPING WEIGHTS (LBS.)		
				OIL (GPH) (2)	GAS (MBH)				OIL	GAS	GAS/OIL
FD-7	262	7.8	229	2.3	331	5	44	4.8	970	1000	1020
FD-9	315	9.4	274	2.8	397	6	52	4.8	1000	1030	1050
FD-10	355	10.6	309	3.1	447	7	80	6.0	1080	1110	1130
FD-12	459	13.7	399	4.0	577	8	77	6.0	1350	1380	1400
FD-14	516	15.4	449	4.5	649	9	94	9.2	1375	1405	1425
FD-15	574	17.1	499	5.0	721	10	91	9.2	1400	1430	1450
FD-19	688	20.5	598	6.0	865	12	87	9.2	1560	1590	1610
FD-24	861	25.7	748	7.5	1082	16	109	11.4	1780	1810	1830
FD-30	1090	32.5	948	9.5	1370	20	153	18.8	2400	2430	2450
FD-38	1377	41.1	1197	12.0	1730	24	189	27.6	3300	3330	3350
FD-45	1617	48.0	1397	14.0	2019	28	177	27.6	3560	3590	3610

1. Net ratings are based on a piping and pick-up allowance of 1.15. Consult manufacturer for installations having unusual piping and pick-up requirements, such as intermittent system operation, extensive piping systems, etc. Ratings are for installation from sea level to 2000 feet elevation.
2. Firing rate in GPH is based on oil having a heat value of 140,000 BTU/GAL.
3. Tankless heater ratings are based on continuous draw (GAL./MIN) at 40°-140°F rise with 200°F boiler water temperature.

Note: All sizes meet or exceed 80% combustion efficiency.

RATINGS - TANKLESS COILS*

BOILER MODEL	GALLONS PER HOUR	GPM	PRESSURE DROP P.S.I. AT FLOW RATE FOR 100° F RISE
FD-7	300	5	10.5
FD-9	360	6	15.3
FD-10	420	7	14.7
FD-12	480	8	19.2
FD-14	540	9	8.9
FD-15	600	10	11.0
FD-19	720	12	15.8
FD-24	960	16	1.9
FD-30	1200	20	2.9
FD-38	1440	24	2.9
FD-45	1680	28	3.9

*Based on 100°F rise with 200°F boiler water temperature and 40°F heater inlet temperature (continuous draw).

For use of the FD Series as a continuous hot water supply boiler, select the boiler and tankless coil based on the required amount of hot water flow. Heating needs should be considered in addition to hot water requirements. If control of hot water temperature and flow is desired, temperature and flow controls may be added.

Contact Burnham Commercial for inlet temperatures in excess of 70°F, or if a temperature rise other than 100°F is desired. If pressure drops are found to be excessive, it is possible in some cases to oversize the heater.

STANDARD EQUIPMENT

ALL BOILERS

Vertical firetube type steel boiler with commercial grade 3" diameter tubes; Insulated deluxe jacket; Pressure/temperature gauge; 30 PSI Safety relief valve; High-Low limit control - L4081A; 750P-MT-120 (all sizes except FD7 and FD9);

OIL FIRING-Beckett Burner

Forced draft oil burner for #2 fuel oil; Burner mounted two-stage fuel pump; Ignition transformer; Cad cell primary control; Dual oil valves; Motor voltage: 120/60/1 - all sizes
Firing sequence: On-off (FD7 thru FD19), Low-high-off (FD24 thru FD45)

GAS FIRING-Power Flame JR Series Burner

Forced draft burner for natural or LP gas; Ignition transformer; Gas pressure regulator; Air flow safety switch and dual gas valve; RM7895A flame safeguard control with flame rod sensor on FD7 thru FD24; RM7895A flame safeguard with ultraviolet flame sensor FD30 thru FD45; Motor voltage: 120/60/1 - all sizes; Firing sequence: On-off (FD7 thru FD30), Low-high-off (FD38 and FD45)

GAS/OIL FIRING-Power Flame CR Series Burner

Forced draft burner for gas/#2 fuel oil; Ignition transformer; Air flow safety switch, dual gas valve and dual oil valves; RM7895A flame safeguard with ultraviolet flame sensor; Gas pressure regulator and manual fuel changeover switch; Motor voltage: 120/60/1 FD7 thru FD30, 230/60/1 FD38 thru FD45; Firing sequence: On-off (FD7 thru FD24), Low-high-off (FD30 thru FD45)

All above are assembled, wired and packaged in a shipping crate.



Burnham Commercial - Lancaster, PA

Phone: 1-877-567-4328

www.burnhamcommercial.com

Limited Warranty

FD SERIES

Limited Warranty – **Except as provided below with respect to products or parts not manufactured by Burnham Commercial**, Burnham Commercial warrants to the original owner at the original installation site that products manufactured by Burnham Commercial, America's Boiler Company comply, at the time of manufacture, with recognized Hydronics industry regulatory agency standards and requirements then in effect and will be free from defects in materials and workmanship for a period of one year after the date of installation.

The remedy for breach of this warranty is expressly limited to the repair or replacement of any part found to be defective under conditions of normal use and does not extend to liability for incidental, special or consequential damages or losses such as loss of the use of the products, inconvenience, loss of time or labor expense involved in repairing or replacing alleged defective product. Burnham Commercial shall have no responsibility for the performance of any product sold by it under conditions varying materially from those under which such product is usually tested under existing industry standards, nor for any damage to the product from abrasion, erosion, corrosion, deterioration or the like due to abnormal temperatures or the influence of foreign matter or energy, nor for the design or operation of any system of which any such product may be made a part or for the suitability of any such product for any particular application.

For products or parts not manufactured by Burnham Commercial, the warranty obligation of Burnham Commercial shall, in all respects, conform and be limited to the warranty actually extended to Burnham Commercial by its vendors.

Warranty service can be obtained by contacting the original installer of the product and providing them with a detailed description of any apparent defect. If this procedure fails to result in satisfactory warranty service, the owner should notify Burnham Commercial, America's Boiler Company, P.O. Box 3939, Lancaster, PA 17603. Transportation to a factory or other designated facility for repairs of any products or items alleged defective shall, in all events, be the responsibility and at the cost of the owner.

Notwithstanding any of the above provision, (1) failures resulting from misuse, improper installation or lack of maintenance are not covered by this warranty, and (2) Burnham Commercial's liability under this warranty shall not exceed the selling price of the product found to be defective.

Equipment furnished by the Buyer, either mounted or unmounted, and when contracted for by the Buyer to be installed or handled is not covered by this warranty. Burnham Commercial does not assume any responsibility in connection with such equipment, operation, warranty, performance, or any other liability connected thereto.

Then foregoing provisions of this WARRANTY shall be effective to the maximum extent permitted by applicable law, and, to the extent that any such provision would otherwise have an unconscionable result or would otherwise be inconsistent with applicable law, such provision shall be limited in effect to the minimum extent necessary to avoid such unconscionable result or inconsistency with applicable law.

Any implied warranties, including implied warranties of merchantability and fitness for a particular purpose shall, to the extent permitted by applicable law, be limited in duration to a period of one year after the date of installation. To the extent permitted by applicable law, the remedies for breach of any such implied warranty shall be limited to the remedies set forth above with respect to a breach of the express limited warranty provided. With respect to the limitations on implied warranties set forth above, Burnham Commercial hereby notifies each person to whom such warranty is made as follows: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations, or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



Limited Warranty

For Commercial Grade Boilers

Using Cast Iron, Carbon Steel,
or Stainless Steel Heat Exchangers
and Parts/Accessories

Subject to the terms and conditions set forth below, Burnham Commercial, Lancaster, Pennsylvania hereby extends the following limited warranties to the original owner of a commercial grade water or steam boiler or Burnham Commercial supplied parts and/or accessories manufactured and shipped on or after October 1, 2009:

ONE YEAR LIMITED WARRANTY ON COMMERCIAL GRADE BOILERS AND PARTS / ACCESSORIES SUPPLIED BY BURNHAM COMMERCIAL

Burnham Commercial warrants to the original owner that its commercial grade water and steam boilers and parts/accessories comply at the time of manufacture with recognized hydronic industry standards and requirements then in effect and will be free of defects in material and workmanship under normal usage for a period of one year from the date of original installation. If any part of a commercial grade boiler or any part or accessory provided by Burnham Commercial is found to be defective in material or workmanship during this one year period, Burnham Commercial will, at its option, repair or replace the defective part (not including labor).

HEAT EXCHANGER WARRANTIES

Burnham Commercial warrants to the original owner that the heat exchanger of its commercial grade boilers will remain free from defects in material and workmanship under normal usage for the time period specified in the chart below to the original owner at the original place of installation. If a claim is made under this warranty during the "No Charge" period from the date of original installation, Burnham Commercial will, at its option, repair or replace the heat exchanger (not including labor). If a claim is made under this warranty after the expiration of the "No Charge" period from the date of original installation, Burnham Commercial will, at its option and upon payment of the pro-rated service charge set forth below, repair or replace the heat exchanger. The service charge applicable to a heat exchanger warranty claim is based upon the number of years the heat exchanger has been in service and will be determined as a percentage of the retail price of the heat exchanger model involved at the time the warranty claim is made as follows:

Years in Service	Service Charge as a % of Retail Price									
	1	2	3	4	5	6	7	8	9	10+
Cast Iron	No Charge									100
Carbon Steel	No Charge	100								
Stainless Steel	No Charge					20	40	60	80	100

NOTE: If the heat exchanger involved is no longer available due to product obsolescence or redesign, the value used to establish the retail price will be the published price as set forth in Burnham Commercial Repair Parts Pricing where the heat exchanger last appeared or the current retail price of the then nearest equivalent heat exchanger, whichever is greater.

ADDITIONAL TERMS AND CONDITIONS

1. **Applicability:** The limited warranties set forth above are extended only to the original owner at the original place of installation within the United States and Canada. These warranties are applicable only to boilers, parts, or accessories designated as commercial grade by Burnham Commercial and installed and used exclusively for purposes of commercial space heating or domestic hot water generation through a heat exchanger (or a combination for such purposes) and do not apply to residential grade products or industrial uses.
2. **Components Manufactured by Others:** Upon expiration of the one year limited warranty on commercial grade boilers, all boiler components other than heat exchangers manufactured by others but furnished by Burnham Commercial (such as oil burner, circulator and controls) will be subject only to the manufacturer's warranty, if any.
3. **Proper Installation:** The warranties extended by Burnham Commercial are conditioned upon the installation of the commercial grade boiler, parts, and accessories in strict compliance with Burnham Commercial installation instructions. Burnham Commercial specifically disclaims liability of any kind caused by or relating to improper installation.
4. **Proper Use and Maintenance:** The warranties extended by Burnham Commercial are conditioned upon the use of the commercial grade boiler, parts, and accessories for its intended purposes and its maintenance accordance with Burnham Commercial recommendations and hydronics industry standards. For proper installation, use, and maintenance, see all applicable sections of the Installation and Operating, and Service Instructions Manual furnished with the unit.
5. This warranty does not cover the following:
 - a. Expenses for removal or reinstallation. The owner will be responsible for the cost of removing and reinstalling the alleged defective part or its replacement and all labor and material connected therewith, and transportation to and from Burnham Commercial.
 - b. Components that are part of the heating system but were not furnished by Burnham Commercial as part of the commercial boiler.
 - c. Improper burner adjustment, control settings, care or maintenance.
 - d. This warranty cannot be considered as a guarantee of workmanship of an installer connected with the installation of the Burnham Commercial boiler, or as imposing on Burnham Commercial liability of any nature for unsatisfactory performance as a result of faulty workmanship in the installation, which liability is expressly disclaimed.

- e. Boilers, parts, or accessories installed outside the 48 contiguous United States, the State of Alaska and Canada.
 - f. Damage to the boiler and/or property due to installation or operation of the boiler that is not in accordance with the boiler installation and operating instruction manual.
 - g. Any damage or failure of the boiler resulting from hard water, scale buildup or corrosion the heat exchanger.
 - h. Any damage caused by improper fuels, fuel additives or contaminated combustion air that may cause fireside corrosion and/or clogging of the burner or heat exchanger.
 - i. Any damage resulting from combustion air contaminated with particulate which cause clogging of the burner or combustion chamber including but not limited to sheetrock or plasterboard particles, dirt, and dust particulate.
 - j. Any damage, defects or malfunctions resulting from improper operation, maintenance, misuse, abuse, accident, negligence including but not limited to operation with insufficient water flow, improper water level, improper water chemistry, or damage from freezing.
 - k. Any damage caused by water side clogging due to dirty systems or corrosion products from the system.
 - l. Any damage resulting from natural disaster.
 - m. Damage or malfunction due to the lack of required maintenance outlined in the Installation and Operating Manuals furnished with the unit.
6. **Exclusive Remedy:** Burnham Commercial obligation for any breach of these warranties is limited to the repair or replacement of its parts (not including labor) in accordance with the terms and conditions of these warranties.
 7. **Limitation of Damages:** Under no circumstances shall Burnham Commercial be liable for incidental, indirect, special or consequential damages of any kind whatsoever under these warranties, including, but not limited to, injury or damage to persons or property and damages for loss of use, inconvenience or loss of time. Burnham Commercial liability under these warranties shall under no circumstances exceed the purchase price paid by the owner for the commercial grade boiler involved. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
 8. **Limitation of Warranties:** These warranties set forth the entire obligation of Burnham Commercial with respect to any defect in a commercial grade boiler, parts, or accessories and Burnham Commercial shall have no express obligations, responsibilities or liabilities of any kind whatsoever other than those set forth herein. These warranties are given in lieu of all other express warranties.

ALL APPLICABLE IMPLIED WARRANTIES, IF ANY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED IN DURATION TO A PERIOD OF ONE YEAR EXCEPT THAT IMPLIED WARRANTIES, IF ANY, APPLICABLE TO THE HEAT EXCHANGER IN A COMMERCIAL GRADE BOILER SHALL EXTEND TO THE ORIGINAL OWNER FOR THE TIME SPECIFIED IN THE HEAT EXCHANGER SECTION SHOWN ABOVE AT THE ORIGINAL PLACE OF INSTALLATION. SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

PROCEDURE FOR OBTAINING WARRANTY SERVICE

In order to assure prompt warranty service, the owner is requested to complete and mail the Warranty Card provided with the product or register product online at www.burnhamcommercialcastiron.com within ten days after the installation of the boiler, although failure to comply with this request will not void the owner's rights under these warranties. Upon discovery of a condition believed to be related to a defect in material or workmanship covered by these warranties, the owner should notify the installer, who will in turn notify the distributor. If this action is not possible or does not produce a prompt response, the owner should write to Burnham Commercial, P.O. Box 3939, Lancaster, PA 17604, giving full particulars in support of the claim. The owner is required to make available for inspection by Burnham Commercial or its representative the parts claimed to be defective and, if requested by Burnham Commercial to ship these parts prepaid to Burnham Commercial at the above address for inspection or repair. In addition, the owner agrees to make all reasonable efforts to settle any disagreement arising in connection with a claim before resorting to legal remedies in the courts.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.



America's Boiler Company

Burnham Commercial, P.O. Box 3939, Lancaster, PA 17604



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Commercial Boilers





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